GAS

ENGINEERING • UTILIZATION • LOAD-BUILDING • MANAGEMENT

Formerly Western Gas

Complete

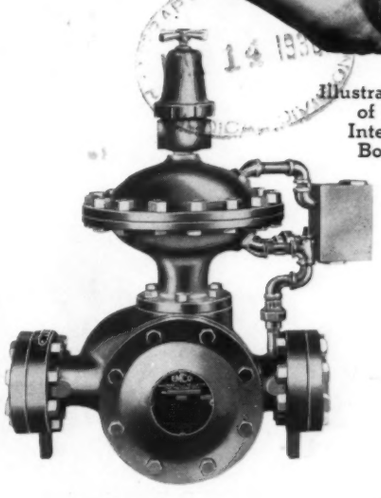
adaptability

Illustrating Simple Method of Removing and Interchanging Inlet Bowl and Valves

The principal difficulty encountered in all control work is the proper apportioning of the control element to existing conditions. In the **EMCO** Balanced Valve Regulator design, where removable valves and valve seats can be changed to adapt to load conditions, this difficulty is eliminated. Varying loads and pressure conditions, whether seasonal or over long periods, are thus readily handled with an **EMCO** regulator.

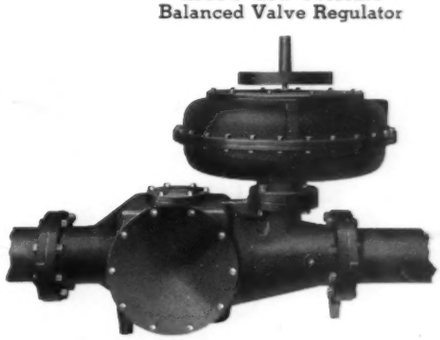
The **EMCO** basic design permits variation in valve size, variation in valve material (hard or soft), change in outlet pressure ranges by changing diaphragm heads, and change in type of control depending on type of accuracy required.

COMPLETE ADAPTABILITY!



EMCO High Pressure Balanced Valve Regulator Equipped with Pilot Loading Head

EMCO Low Pressure Balanced Valve Regulator



PITTSBURGH EQUITABLE METER COMPANY

MERCO NORDSTROM VALVE CO.

NEW YORK · BUFFALO · PHILADELPHIA · KANSAS CITY · TULSA · LOS ANGELES — *Main Offices* - PITTSBURGH, PA. — DES MOINES · CHICAGO · COLUMBIA · MEMPHIS · OAKLAND · HOUSTON

EMCO *Balanced Valve* REGULATORS

MARCH 1938 • • 25 CENTS

SUPER-DE LAVAUD CENTRIFUGAL CAST IRON PIPE

U. S. Pit Cast Pipe

U. S. Mechanical Joint Pipe

U. S. Threaded Cast Iron Pipe

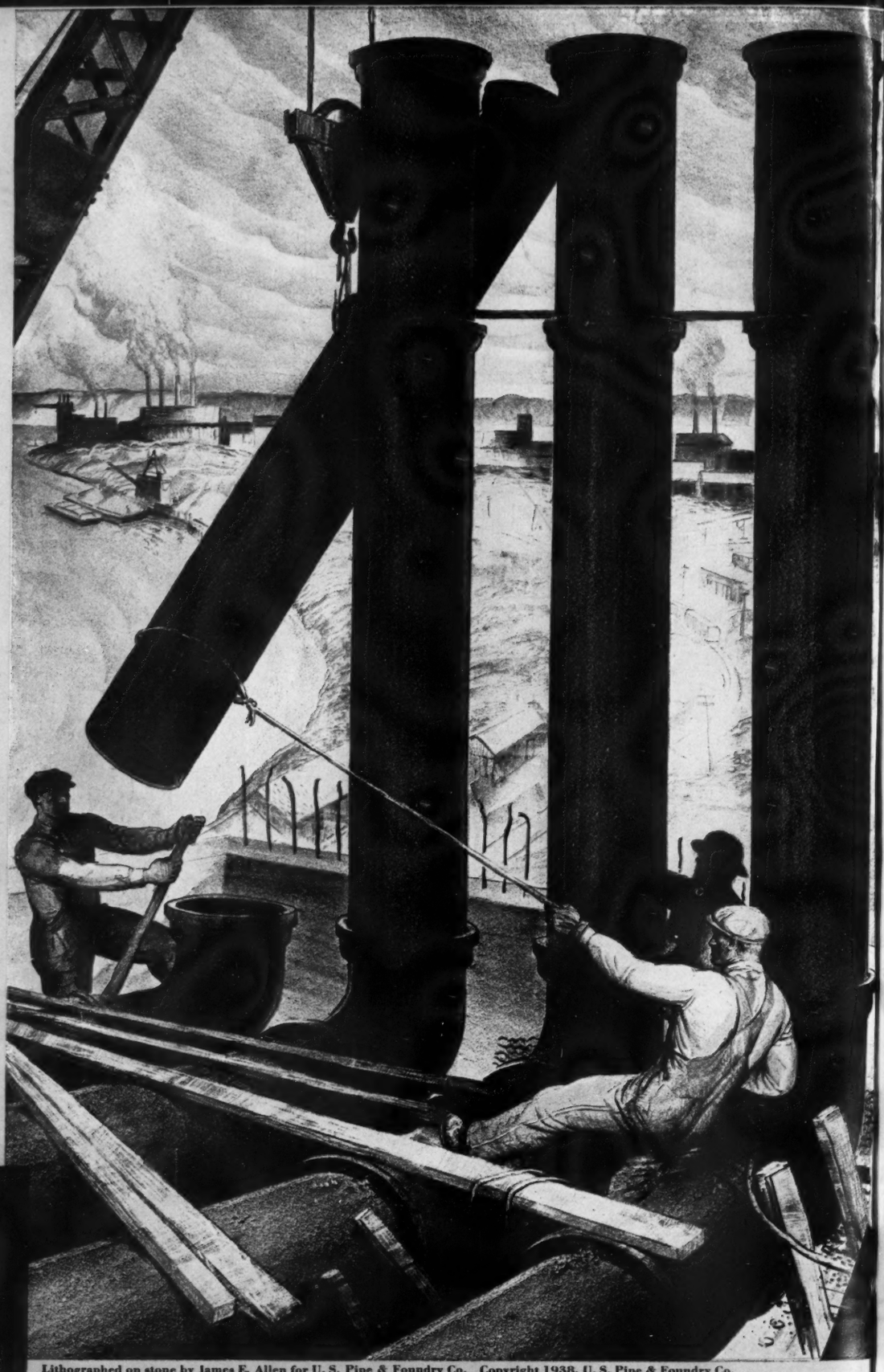
U. S. Ni-Resist Cast Iron Pipe

U. S. Cast Iron Culverts

U. S. Flexible Joint Pipe

Alloy and Gray Iron Castings

U. S. Cast Iron Roof Plates



Lithographed on stone by James E. Allen for U. S. Pipe & Foundry Co. Copyright 1938, U. S. Pipe & Foundry Co.

U.S. cast iron PIPE

Cast iron and alloy cast iron pipe centrifugally or pit cast—for water works, gas, sewerage and drainage service as well as industrial uses involving corrosives.

U. S. PIPE & FOUNDRY CO.
BURLINGTON, NEW JERSEY
Foundries and Sales Offices throughout the U. S.

MANY reasons are adduced by metallurgists for the long life of cast iron pipe. None of them equals in importance the simple historical fact that the first cast iron water mains laid in Europe and America are still in service. The fundamental reason, of course, is that cast iron pipe combines in one material *all* the qualities requisite for long-lived underground service. In the case of Super-de Lavaud centrifugally-cast pipe, because it is "cast without chill in a metal mold," certain of these qualities are greatly enhanced, as for example, resistance to impact.

"YESSIR! THEY ALWAYS SEEM TO KNOW IN ADVANCE EXACTLY WHAT A DRESSER-COUPLED LINE WILL COST"

24" O.D. Style 38 Steel Coupling

No pipe-line operator or builder likes to have a lot of "extras" creep in—costs and delays that weren't expected. And to take such risks is needless! By the specification of simple, *standardized* joints—Dresser Couplings,—your joint-making costs can be figured in advance, right down to the last penny. For instance:

Material Costs—No variables! Parts for every Dresser joint are the same, being "factory-made." **Labor Costs**—Can always be safely estimated on the basis of two man-minutes per bolt. **Construction Delays**—None, because of the clock-like precision with which a Dresser-coupled line goes together.

S. R. DRESSER MFG. COMPANY, BRADFORD, PA.

In Canada: Dresser Mfg. Company, Ltd., 60 Front Street, West, Toronto, Ontario

NOTE TO READER: This is the fourteenth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story, write for Bulletin 351.

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Reg. U. S. Pat. Off.

ABP

Formerly WESTERN GAS

LOS ANGELES
810 South Spring Street
Phone Michigan 1481

CHICAGO
1064 Peoples Gas Bldg.
Phone HARrison 8536

HOUSTON
306 Shell Building
Phone Capitol 2093

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JAY JENKINS, Publisher

CRAIG ESPY, Assistant Publisher — **ARTHUR ROHMAN, Managing Editor**

ANATOL FOMILYANT, News Editor — **W. G. RUSSELL, Field Representative**

March, 1938. Volume XIV, Number 3. GAS is published monthly by Western Business Papers, Inc., at 810 South Spring Street, Los Angeles, California. Jay Jenkins, President; Craig Espy, Vice-president; George H. Finley, Vice-president; James E. Jenkins, Secretary-Treasurer. Subscription price (in advance) 25 cents the copy. $1.00 per year; other than U. S., $2.00 per year. Entered as second class matter August 20, 1936, at the post office at Los Angeles, Calif., under the Act of March 3, 1879. Copyright, 1938.

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CLEAN GAS MAKES SATISFIED CUSTOMERS

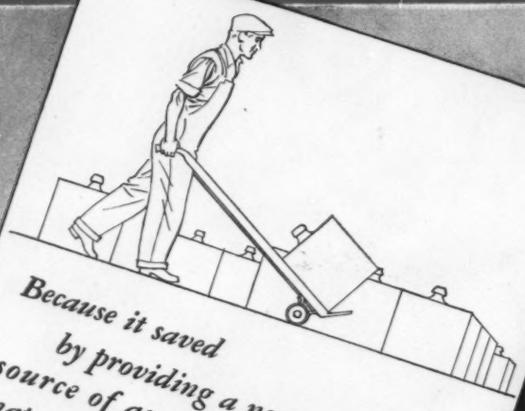
Satisfied customers are your best market for new gas appliances which increase and continue the use of gas. One thing to remember: Modern gas appliances have smaller apertures and more delicate mechanism than those of the past. Today it isn't always safe to trust "home-made" gas cleaners. The way to keep complaints down is to sell only CLEAN gas. Blaw-Knox Gas Cleaners are the sure, dependable way to the kind of customer satisfaction that closes the door to competition and clears the way to an increasing use of gas. Operating engineers everywhere prefer them.

BLAW-KNOX
GAS CLEANERS

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY · FARMERS BANK BLDG. · PITTSBURGH, PA.

Why FOUR COMPANIES INSTALLED

1

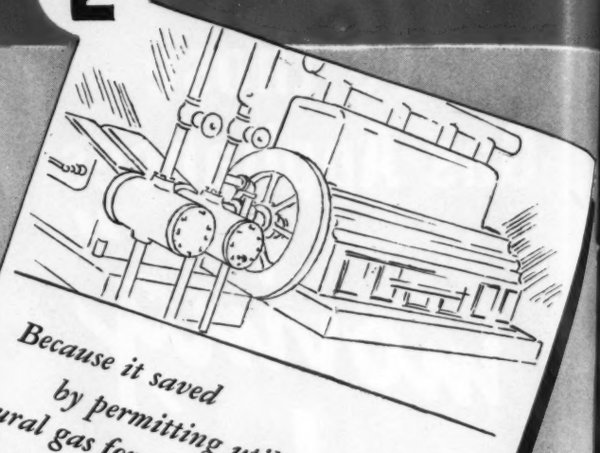


Because it saved

by providing a new and cheaper source of an essential processing material.

This refinery uses a large amount of sulfuric acid in processing its major products. The cost of this acid is a considerable item in the operation. The acid is now made from hydrogen sulfide . . . formerly a major nuisance . . . recovered from the refinery still gas by the Phenolate Process. This provides sulfur in the most easily convertible form, and at a fraction of previous cost.

2



Because it saved

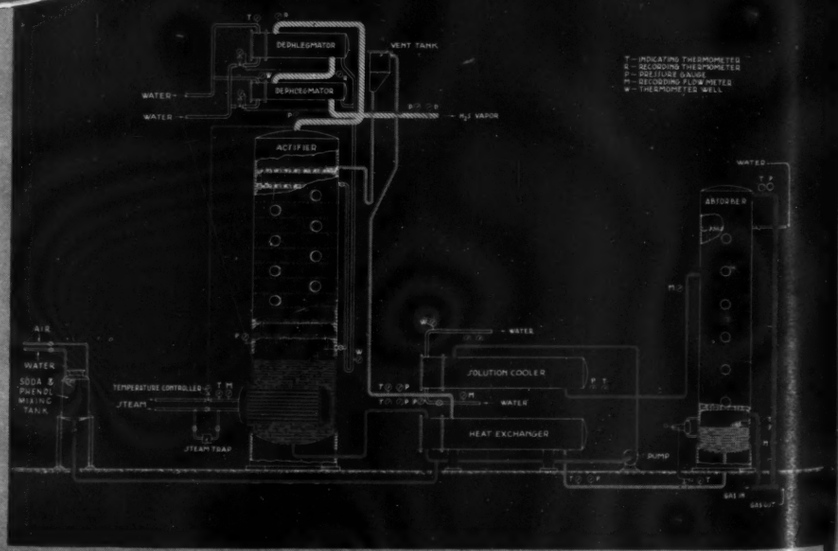
by permitting utilization of natural gas for power units.

This natural gas producer is a large user of power for compressing, and other operations. The cheapest source of the necessary power at hand was natural gas. High hydrogen sulfide content, however, causes excessive deterioration of gas engines. Installation of a Koppers Phenolate plant eliminated the cause of the deterioration, and thus permitted natural gas to be used with maximum economy.

The single stage

KOPPERS PHENOLATE SYSTEM

Removes and Recovers 98% of H_2S



Refinery operators and natural gas producers find this system effective in eliminating corrosive or noxious atmospheres from burned gas and in meeting standards demanding low H_2S content in the gas. Equipment is small, compact, easy to maintain and tend, and so low in cost as to permit quick amortization of the initial investment. Koppers engineers will gladly confer with you on your problem. Communicate with Koppers Co., Engineering and Construction Division, Pittsburgh, Pa.

U. S. Patent Nos. 2,002,357; 2,028,124; 2,028,125

KOPPERS PHENOLATE PURIFICATION SYSTEM

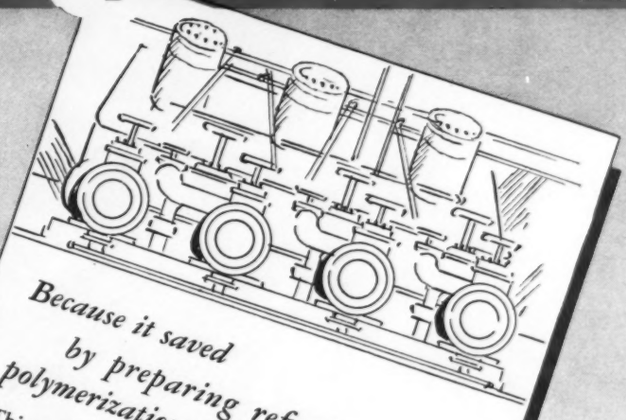
THE KOPPERS PHENOLATE *Purification System*

3

Because it saved
by sweetening gas to serve a profitable Domestic market.

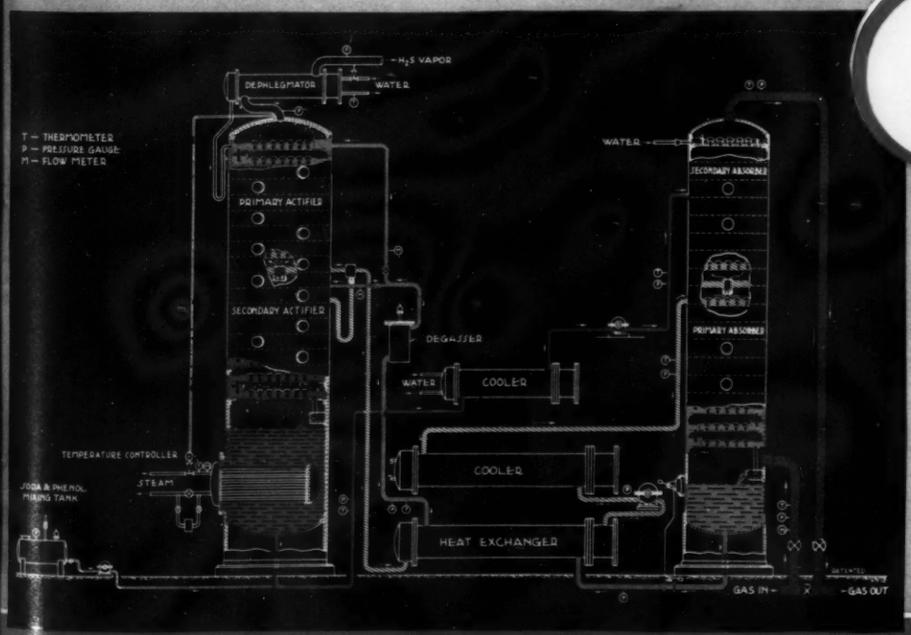
This producer, sinking wells in a field normally sweet, encountered sour gas. Restrictions common in most states prevented the sale of the gas for domestic purposes as originally intended. The entire investment was jeopardized. The installation of a Koppers Phenolate Purification System made the gas marketable, and converted what might have been a serious loss into a profitable operation.

4



Because it saved
by preparing refinery gas for polymerization—inexpensively.

This refiner installed an immense polymerization unit for the production of high-octane motor fuel. A Koppers Phenolate plant prevents the rapid deterioration of the polymerization equipment otherwise inevitable. It also eliminates the necessity for removing, from the finished product, organic sulfur compounds formed from the H_2S. The H_2S is converted to sulfuric acid, establishing an additional credit for the entire operation.



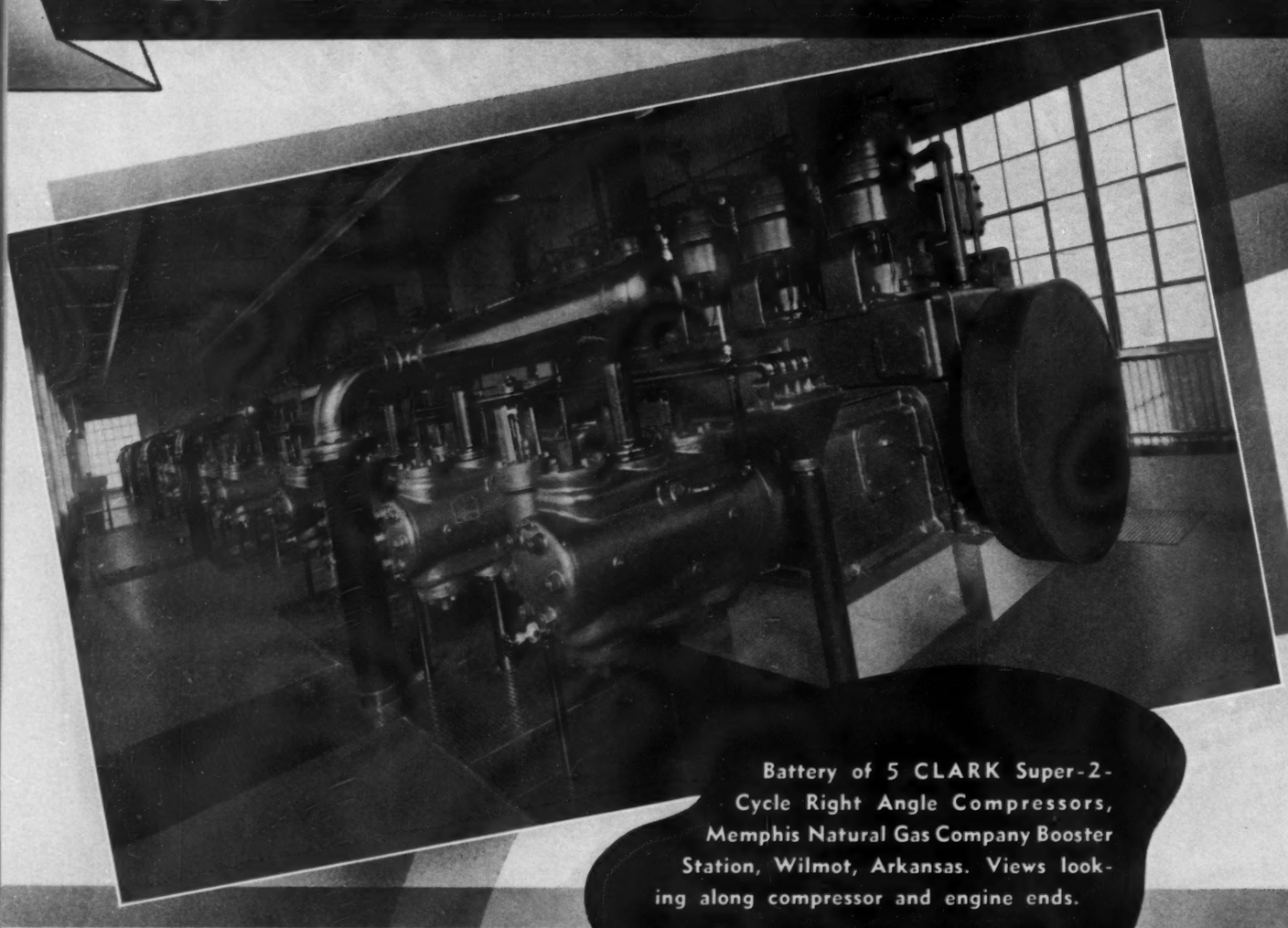
The two-stage
KOPPERS PHENOLATE SYSTEM
Removes and Recovers Virtually All H_2S

This newest development solves the refiners and producers problems when any appreciable amount of H_2S would have a detrimental effect in further processing or utilization. Exclusive features, *fully protected by patents*, permit actification of part of the solution to such a high degree that second-stage scrubbing removes practically all H_2S. This is done without the use of extra steam, and without the great increase in size and cost of equipment, which would be necessary to duplicate the results with separate systems.

U. S. Patent No. 1,971,798

a KOPPERS product

A *MAJOR* CHANGE IN



Battery of 5 CLARK Super-2-Cycle Right Angle Compressors, Memphis Natural Gas Company Booster Station, Wilmot, Arkansas. Views looking along compressor and engine ends.

BOOSTER STATION DESIGN

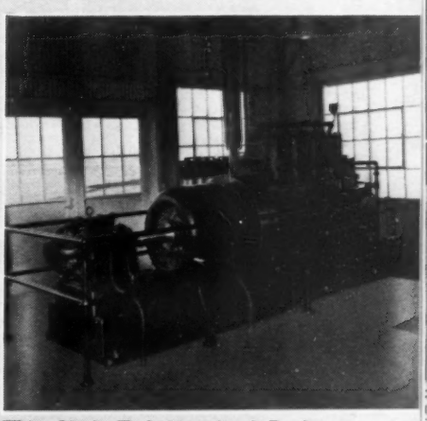
Memphis Natural Gas Company Wilmot Station, showing Main Compressor Building, Building housing Auxiliaries and Office, and Meter House.

—Introduced by CLARK "Super-2-Angle"— Note SAVING in Size of Building!

All other industries have gone to higher speeds, lighter weights. Now the Gas Industry is also realizing you can get higher speed, lighter weight, flexibility,—and yet retain the basic necessity — DEPENDABILITY,— by installing the new CLARK "Super-2-Angle" Compressor.

For its new 3,000 H.P. Booster Station at Wilmot, Arkansas, the Memphis Natural Gas Company, after thorough investigation by its engineers, selected CLARK "Super-2-Angle" Compressors in the new 6-cylinder 600 H.P. size. Five of these big units comprise the installation.

These more compact machines bring a major change in booster station design. Note the reduced width of building. This reduced building-cost is one of 5 important savings achieved by the "Super-2-Angle", the others being: Reduced foundation cost; Lower transportation and erection costs; Lower fuel consumption due to CLARK Super-2-Cycle Fuel Injection; Lower maintenance due to extreme simplicity of design. Full information will be promptly mailed on request.



This Clark Z-6 Vertical Engine drives the Lighting Unit at the Wilmot Booster Station.

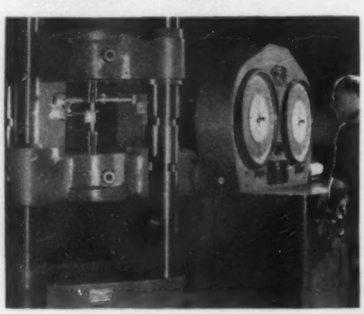
CLARK BROS. COMPANY . . . OLEAN, NEW YORK, U.S.A.

Export Office: 30 Rockefeller Plaza, New York. Midcontinent Sales Offices and Warehouses: Tulsa, Okla., Dallas and Houston, Texas. West Coast Offices: Smith-Booth-Usher, 2001 Santa Fe Av., Los Angeles. Foreign Offices: 72 Turnmill St., E. C. 1, London, England; 4 Str. General Poetas, Bucharest, Roumania.

CLARK

"FINGERPRINTING" COLD METAL

3000 magnifications . . . flash . . . and a picture of a microscopic examination of a metal is made and filed away for future reference on its behavior. Again a precision instrument of highest quality helps to make certain that what's inside a Crane valve is exactly what should be there for greatest service.



MEASURING METAL STRENGTH

Test sections from raw materials for Crane valves tell their tale of tensile strength and elasticity in this ponderous testing machine. Sections are tested to the breaking point, which must be way over specification requirements. What's going inside proves its value here.

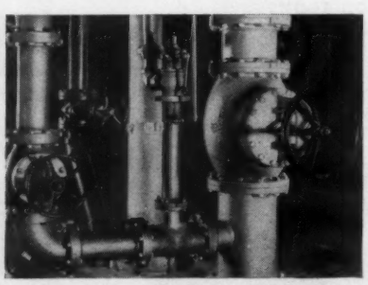
PROVING THEIR CONTROL OVER FLOW

(RIGHT) All dressed up and ready for the stock room, except that they have to withstand the seeking, searching fingers of water, air or steam under pressures far higher than service ratings. Such are the tests that Crane valves must pass before being certified for service.

—and that goes for

CRANE VALVES
for the Gas Industry

The wrapper may make a cigar look nice. But it takes a high quality, long filler to make it a good smoke. Valves are like good cigars . . . it's what's inside that counts in performance. The more-than-ordinary performance of Crane valves in common use is due to unparalleled experience in designing, uncommon quality of raw materials, unusual care in manufacture, unvarying high standards maintained by the most complete and exacting system of checks and tests of products used in the industry. Install Crane valves and enjoy uncommon valve performance even in valves of common use.



THE SUREST TEST OF QUALITY

For three generations of actual service, Crane valves have been proving that they are good all the way through in millions of locations. Only Crane has so vast an accumulated experience in producing valves of known quality, of predictable performance in service.

● If you want uncommon quality in valves of common use, look in the Crane No. 52 Catalog. In its 764 pages there are 38,000 piping items. Quick delivery is assured from a nearby stock. You will find Crane service, like Crane products, good all the way through.

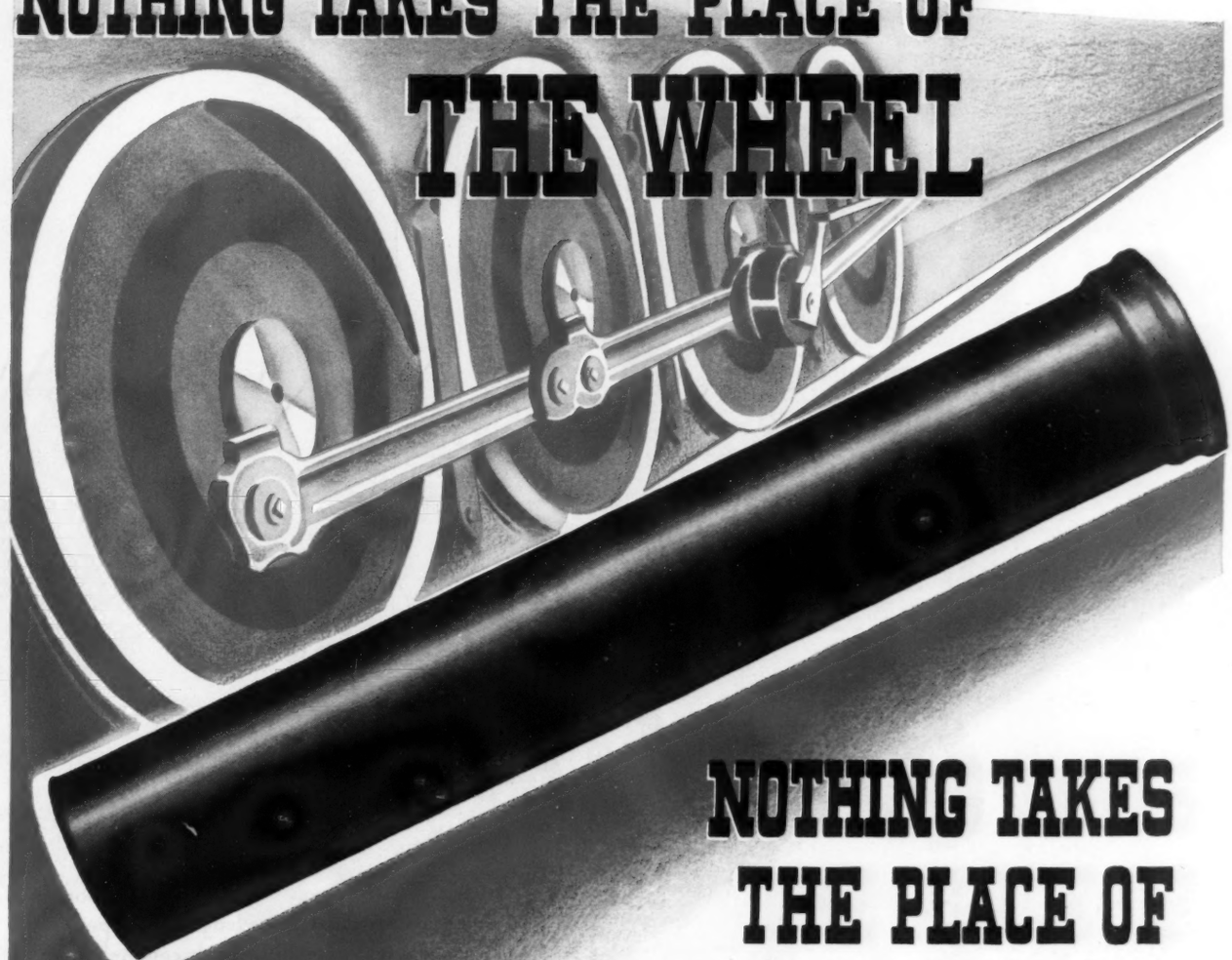
CRANE

CRANE CO., GENERAL OFFICES:
836 SO. MICHIGAN AVENUE, CHICAGO

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS

NOTHING TAKES THE PLACE OF THE WHEEL



NOTHING TAKES THE PLACE OF CAST IRON PIPE

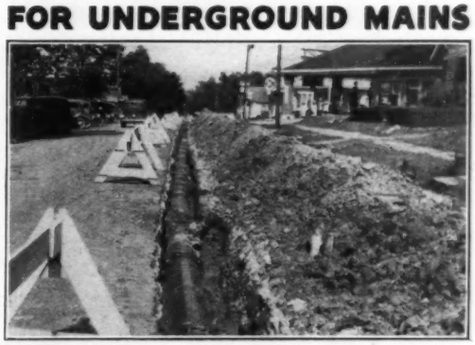
THE wheel for locomotion overground—cast iron pipe for conduits underground—nothing has taken their place for centuries. Both are basic and indispensable. Both have been highly developed in design and efficiency during the past 20 years.

If you demand *proved* long life and low maintenance cost that result from effective resistance to corrosion—assured safety margins for impact, beam load and crushing stresses—and permanently tight joints—then you will agree that *nothing takes the place of cast iron pipe.* Some materials meet some of these requirements but only cast iron pipe meets them all.

CAST Q IRON

Look for the "Q-Check" registered trade mark.
Cast iron pipe is made in diameters from 1¼ to 84 inches.

THE STANDARD MATERIAL FOR UNDERGROUND MAINS



Installing a cast iron gas main with modern bottle-tight mechanical joints. Cast iron pipe in America's first gas distribution system, installed 104 years ago, is still in service.

THE CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER, 1013 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS

ON TIME!

THE VAST organization that is railroading is built around these two vitally important words. Posted on the station bulletin board, they signify fulfillment of the carrier's dual responsibility — to deliver passengers at their destination and to deliver them promptly on split-second schedule.

Our organization, likewise, appreciates their tremendous importance! Going deep to the root of things, we have never permitted ourselves to lose sight of the fact that our client's object in building an absorption plant is to receive a return from the investment it represents at the earliest possible moment. Thus, our acknowledged responsibility becomes not only to engineer soundly, to design correctly and to build solidly, but to finish the job within the time limit specified.

To discharge that responsibility we draw upon the combined resources of knowledge and experience. Waste motion is averted through comprehensive knowledge of the most modern engineering and design practices. Lost time is eliminated through the employment of skilled workmen eager to be up and at it. Delay is avoided by experience in selecting, ordering and routing plant equipment so that arrival for installation is timed well ahead of schedule.

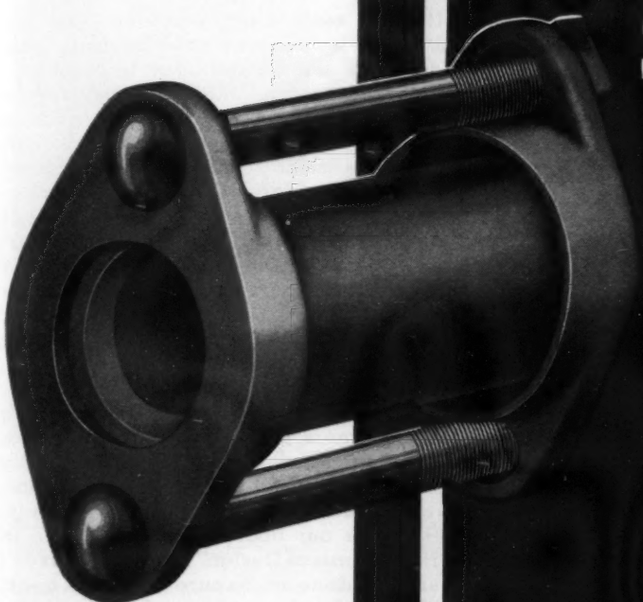
When planning the erection of an absorption plant, let our organization bring to your problem our established reputation for engineering soundly, designing correctly, building solidly and — keeping ever in mind the basic objective behind the decision to build — to complete all these — *"On Time!"*

PARKHILL-WADE
CONSULTING AND
CONSTRUCTION ENGINEERS
973 NORTH MAIN STREET
LOS ANGELES CALIFORNIA

ABSORPTION PLANTS

DAYTON

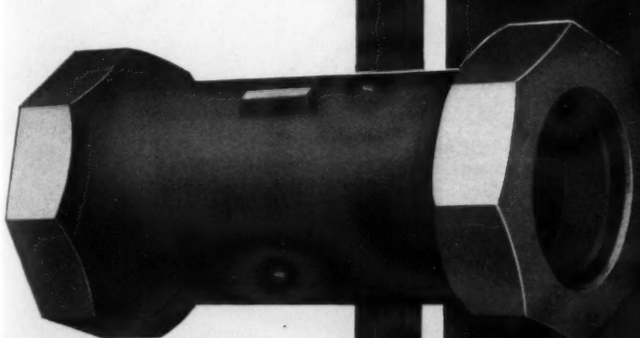
NUMBER ONE



Constructed with Mallable Flanges and Seamless Steel Centers, the Dayton No. 1 is an ideal coupling for service lines.

Regularly furnished in service sizes, painted, completely cadium plated, or with bolts only cadmium plated.

BOLTLESS



The Dayton Boltless Coupling is constructed entirely of malleable iron. Nuts when drawn up completely cover threaded portion of center and apply equal pressure over entire gasket surface. Uses same gaskets as bolted type coupling. Furnished in full range of sizes from ½" to 2" inclusive, with 3", 5", or 10" long centers.

THE NATIONAL SUPPLY COMPANY

DAYTON COUPLING DIVISION — TOLEDO — OHIO

Biggest "Crowd Gas Heat

PACE SETTER. Mueller's Gas Era Furnace out-performs them all. Compare it with any other gas furnace for low operating cost, heat response, and over-all efficiency. The Gas Era Steel Furnace with Heat-Speeder gives average lowest operating cost of any gas furnace unit. Above, taking a pyrometer reading, H. P. Mueller, President (right), E. A. Jones, Chief Engineer (left), with laboratory assistant, getting data on Mueller Gas Era performance.

Mueller Gas Era Steel Furnace has Outsold Every Other Gas Furnace for the past 8 Years!

It's the same story wherever you go. Mueller is breaking sales records from border to border and coast to coast.

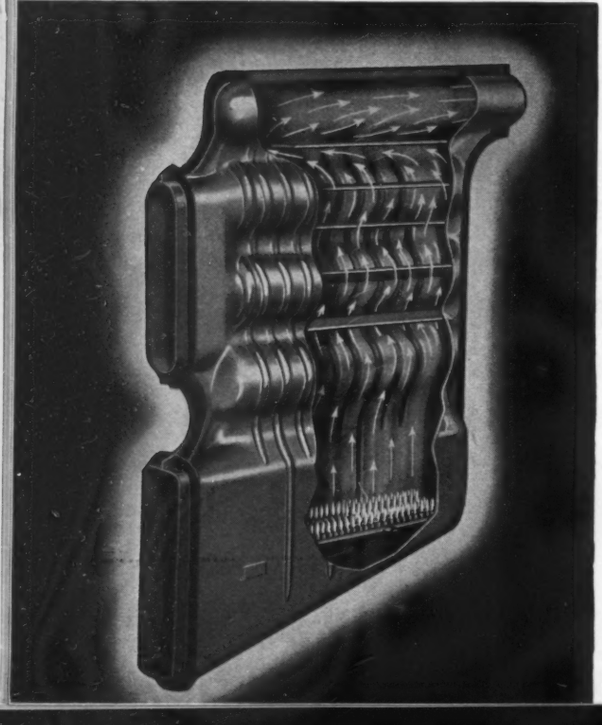
The big reason for this huge nation-wide success is that Mueller Gas Furnaces have what your customers want. Heat-Speeder, fast response, lowest operating cost, longest life—these are dramatic sales producing features, and Mueller has them all!

Take advantage of Mueller's popularity. Utility companies and gas dealers are giving real support to Mueller's Gas Era program... and they're being well repaid in bigger sales, juicier profits, happier customers.

To help you in your gas heating program, Mueller's national advertising is reaching homeowners, builders, architects, real estate men. Also, we are cooperating fully in the National All-Gas Home Competition.

Get into home heating in a big way. Send for our book, "The New Trend in Home Furnace Design," and, if you haven't already done so, be sure to get our book, "The End of Doubt about Air Conditioning." Use convenient coupon below.

L. J. MUELLER FURNACE COMPANY
2002 W. Oklahoma Ave., Milwaukee, Wis.



← **MUELLER "HEAT-SPEEDER"**

This exclusive all-steel gas furnace section sends heat into the house 6 to 8 times faster than old-style units. Lower fuel costs—no temperature overruns. No traps, pockets or diving flues to cause condensation and corrosion. Patented furnace construction. Repeated stop watch tests show that Heat-Speeder requires only 2½ minutes to send heat into the house, as compared with 15 to 20 minutes for other type units. Just as modern autos weigh less, perform better, with less fuel... so does the light weight all-steel Heat-Speeder give quicker heat at lower cost. Remember, with the exception of Mueller's cast iron model, Heat Speeder is used in all Mueller Gas Furnaces shown on these pages.

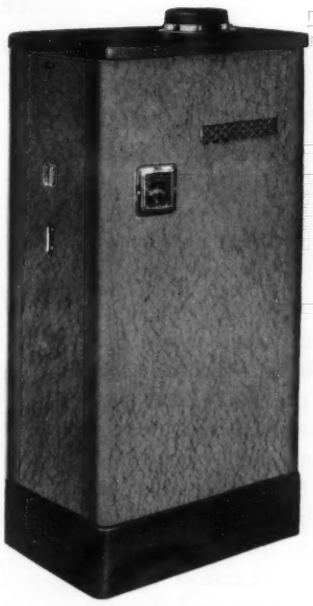
MUELLER GAS ERA ALL CAST IRON FURNACE

Built for permanency. Patented ribbed heating section of cast iron affords double the heating surface presented by a flat casting. May be installed for gravity, or with Mueller Climator Fan-Filter unit as forced air system. Automatic operation. Attractive cabinet. In well-known homes coast to coast.

Pleaser" in the Field . . .

CLIMATROL ATTRACTS PROSPECTIVE HOME OWNERS

Streamlined in appearance—streamlined in comfort. Complete winter air conditioning completely automatic—and at no greater operating cost than for heating alone. Mueller engineered from cabinet to comfort.



MUELLER GAS ERA BOILER

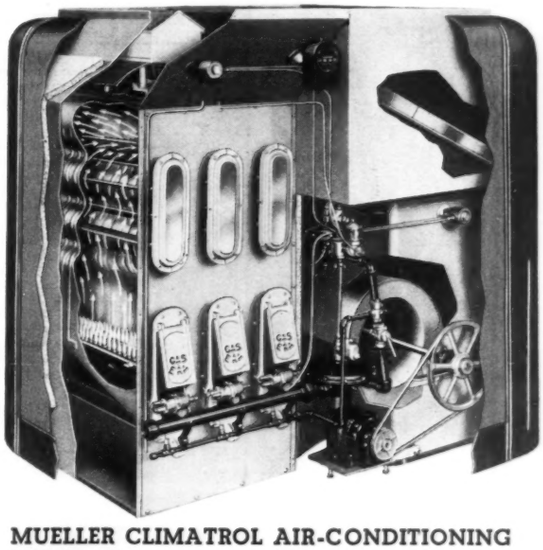
For steam, hot water, or vapor systems. Compact. Cast iron construction. No condensation. No stand-by losses. Insulated cabinet (enclosed as above or with exposed controls).

MUELLERAIRE GAS-FIRED SPACE HEATER

For use in stores, shops, showrooms, small factories and similar applications where unit is to be installed in space to be heated. Eliminates drafts, assures warm floors. Ask about Muelleraire for heating, humidifying, filtering and circulating air in small homes without basements.

← MIGHTY MIDGET

The Gas Era Boiler never ceases to interest home-owners. They wonder how such a small heating plant can give so much heat. Yet it is all that's necessary for completely automatic operation. Dependable. Efficient. Install Gas Era, and there's plenty room for a basement playroom. Modern in design. Modest in price.



MUELLER CLIMATROL AIR-CONDITIONING FURNACE—Heats, cleans, humidifies and circulates air throughout the home. Continuous heat supply, modulated to meet weather conditions by means of throttling gas control—not "on and off" heat. Summer cooling may be added at any time.

MUELLER GAS ERA

AIR CONDITIONING UNITS AND FURNACES

FREE!

L. J. Mueller Furnace Co., 2002 West Oklahoma Avenue, Milwaukee, Wis.

Please send Mueller's new book, "The New Trend in Home Furnace Design." ☐ Also, "The End of Doubt about Air Conditioning."

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FOXBORO ALL-WELDED STEEL HELICAL MOVEMENT

GIVES GREATER ACCURACY AND SAFETY . . . FROM 200 TO 4,000 LB. PRESSURE

Here's the ideal pressure measuring element for recorders ranging from 200 to 4,000 lb. It's the alloy steel unit used in Foxboro Pressure Recorders—welded and heat-treated into an integral unit, a "heart of steel" that will remain accurate and safe under the strain of continuous pressure fluctuations. Corrosion troubles are banished due to the absence of soldering and the use of cadmium plating.

Whatever your needs from a full vacuum to 20,000 lb. pressure, for every service requirement, Foxboro has the Instrument. Note in the chart the recommended measuring elements for various ranges. Bear in mind that the value of a pressure gauge, whether it be an indicator or a recorder, lies in the measuring element.

Many varieties of these standard Foxboro Gauges are illustrated and described in detail in Bulletin No. 185. Write for a copy. The Foxboro Company, 104 Neponset Avenue, Foxboro, Massachusetts, U. S. A. Branch Offices in 25 Principal Cities.

THERE'S A FOXBORO RECORDING GAUGE TO MEET EVERY REQUIREMENT

PRESSURE RANGES		Recommended Construction	Alternate Construction
Vacuum	Partial vacuum, pressure, and compound vacuum and pressure ranges equivalent to less than 6 lb.	Bronze Diaphragm	
6 lb.	Partial vacuum, pressure, and compound vacuum and pressure ranges equivalent to 6 lb. and up to 49 lb.	Bronze Spiral	15-99 lb. Steel Spiral
49 lb.	Full vacuum, pressure, and compound vacuum and pressure ranges equivalent to 49-200 lb. inclusive.	Bronze Helical	99-200 lb. Steel Helical
200 lb.	Pressure and compound ranges equivalent to 201-500 lb. inclusive.	✓ Steel Helical	Bronze Helical
500 lb.	Pressure ranges from 501-800 lb. inclusive.	✓ Steel Helical	
800 lb.	Pressure ranges from 801-4,000 lb. inclusive.	✓ Steel Helical	Steel Bourdon
4,000 lb.	Pressure ranges from 4,001-20,000 lb. inclusive.	Steel Bourdon	
20,000 lb.			

FOXBORO

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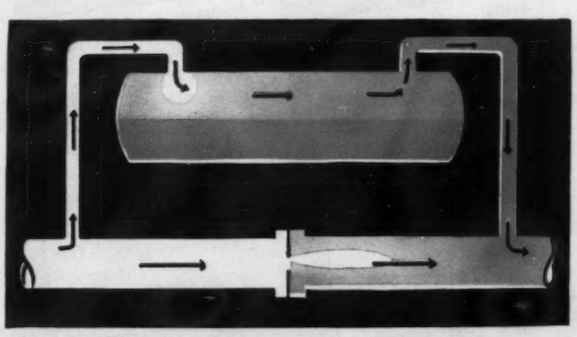
Certified PRESSURE INSTRUMENTS

LIKE A FRESH TRAIL TO A BLOODHOUND . . .

PENTALARM

spreads its unmistakable signal of danger throughout the community at the first sign of escaping gas.

There is never any doubt as to what the intense, penetrating odor of **PENTALARM** means. Your repair gang — your maintenance staff — the residents within the zone of hazard — KNOW AT ONCE that there is a GAS LEAK, and they know exactly WHERE the faulty pipe line is located. Guided accurately by the infallible **"PENTALARM ODOR TRAIL"**, repairmen have the leak unearthed and stopped before it has reached serious proportions.



Only a very small amount of **PENTALARM**, added to the gas flowing through the system, assures complete and continuous odorization. Its method of introduction is simple and low in cost.

Play safe during 1938!

Pentalarm Your Pipelines!

SHARPLES TRADE MARK SOLVENTS

SHARPLES SOLVENTS

THE SHARPLES SOLVENTS CORP., 23rd and Westmoreland Sts., Philadelphia, Pennsylvania

UNIVERSAL GAS RANGE *plus*

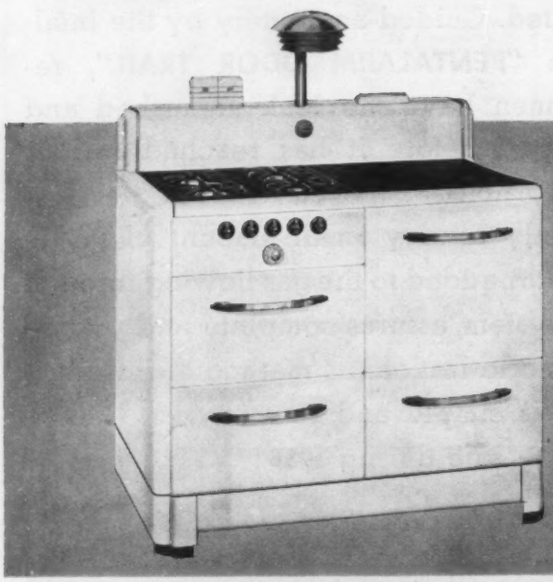
UNIVERSAL 6 POINT SALES PROGRAM

The Key to the 1938 Gas Range Market

★ The 1938 Universal Gas Range, with its advanced devices offers a cooking service that is without parallel in the entire history of cooking appliances. In addition, the Universal, with its "flush to the wall" construction has a superb beauty of appearance—a smart styling—a touch of artistic originality that compels the interested attention of the Homemaker.

Equally important, the 1938 line of Universal Gas Ranges is backed by a sales program that has as its basic foundation, the interest of the "lady who cooks." The Universal Six Point Sales Program is built around those particular selling points which would have the greatest bearing on influencing the consumer not only in favor of gas as the preferred cooking fuel, but also to interest her to the point of replacing her present obsolete cooking equipment.

For complete details on the 1938 Universal Sales Program, write Cribben and Sexton Company, 700 North Sacramento Boulevard, Chicago, Illinois

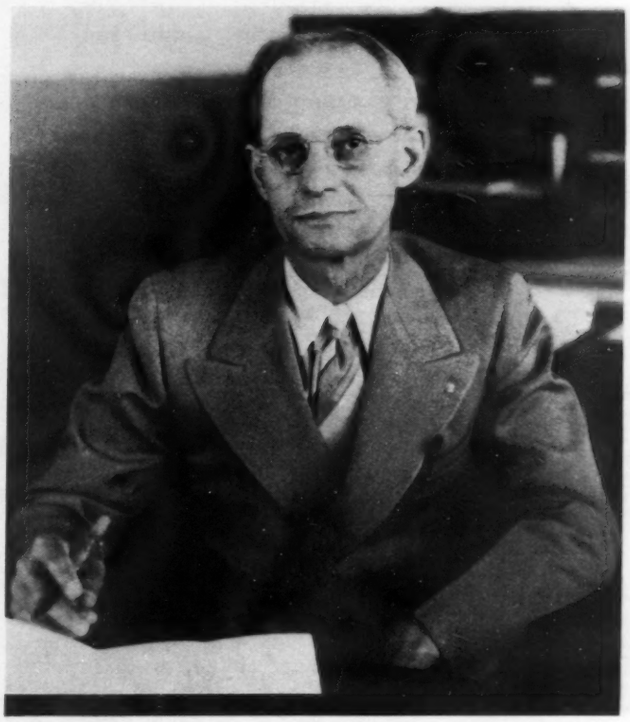


UNIVERSAL GAS RANGES

MANUFACTURED BY CRIBBEN & SEXTON COMPANY, 700 N. SACRAMENTO BLVD., CHICAGO, ILLINOIS

GAS
MARCH, 1938

Guest Editorial



Where Do We Go From Here? — A CHALLENGE

By GEORGE WEHRLE
Superintendent, Gas Department
Public Service Company of Colorado

IF William Murdock were to return to earth, great would be his astonishment at the wonders he would see performed by his brain child—gas. In his wildest fancy he could not have foreseen the miracles that have come to pass as a result of the experiments performed in his little shop in Redruth, not so long ago as time is measured.

Most of the present generation of gas men entered the industry since the turn of this century. They have seen come to pass practically all of the miracles that Murdock would marvel at if he should return today: the conveniences and comforts of the home, the modernization of industry—made possible through the use of gas. They have developed the production of natural gas from wells more than a mile in depth and have transported it through huge pipe lines to markets almost across the nation. They have constructed pipe lines that carry gas at more than a thousand pounds pressure with bottle-tight joints welded or rubber packed. They have protected these pipe lines cathodically from electrolysis and physically from soil corrosion, all based upon accurate information obtained by prior surveys and analyses. They have developed and used new ideas adapted to their needs: trenches are excavated and backfilled by machines, construction is aided by pneumatic pavement breakers, resilient cast-iron pipe is available, leak detectors and pipe finders peer under the surface of the ground, customers off gas mains are given utility service with bottled liquefied gases, manufacturing processes embody highest efficiency, economy, and safety factors. These men have given the world automatically-controlled gas appliances that keep the home at a desired temperature, the water hot, and food cold. They have made available gas ranges which will cook a meal with no more attention than the turning of a valve. They have made possible high-speed mass production in industry. One might wonder what further progress there can be in the gas industry.

THE young men coming into the gas business have a challenge before them that they cannot avoid. Can they match the progress of those now passing them the torch, or must they be content with the laurels won by their predecessors? Will they be stimulated with ambition or lulled with apathy? Will they retain the spirit of those who are going before them, who fought the good fight that there might be a gas business today? We believe they will.

The most powerful weapon for the advance of civilization is modernization. The more ambitious claim that anything done now as it was 20 years ago is sure to be wrong and the progress of the future rests solidly on discarded practices of the past. The need for progressive improvement through modernization is greater today than ever before. Greater, too, are the opportunities for tomorrow. Where will the gas industry go from here, young gas man?

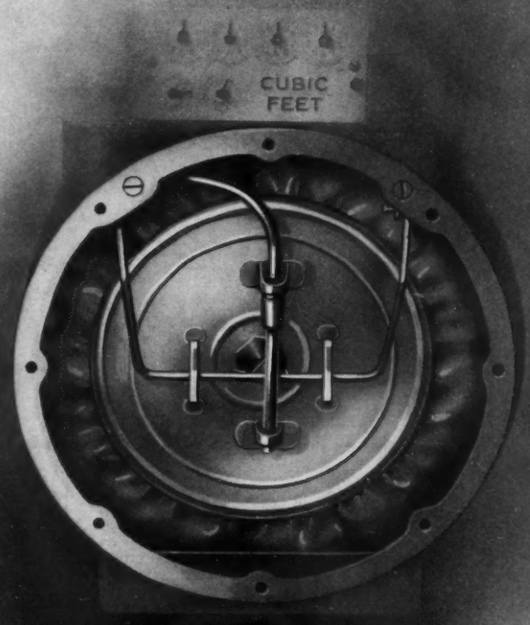
Yes... *and diaphragms!*

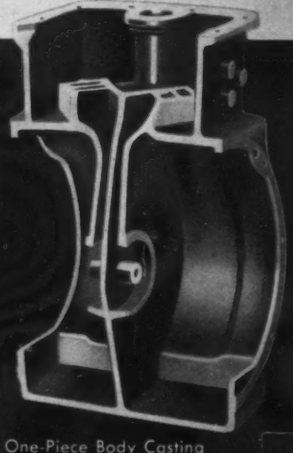
IN METRIC IRONCASE METERS, sustained accuracy of gas measurement begins right at the diaphragm. This follows the approved full bellows principle of design. It is sealed in a leak-proof body casting of one-piece gray iron — formed deep enough to avoid leather contact with corrosion-resistant case.

The back disc is anchored rigidly to the middle partition. Flag rods are so shaped and supported as to produce no unequal motion of fundamental measuring wall.

Ironcase leathers are the product of continuous research to develop the best leather and oils for specific gas conditions. Raw materials, uniformity of grade and thickness, special processing . . . all conform to strict laboratory standards.

Add these and other diaphragm qualities to the many distinctive Ironcase features. You have a proved total of meter accuracy and trouble-free service years. A full range of capacities; high or low pressures.





One-Piece Body Casting
Eliminates Internal Leaks

Volume and Pressure Gage
Charts Hourly Rate of Flow
and Pressure

Established 1836

AMERICAN METER COMPANY
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PACIFIC METER WORKS • LOS ANGELES • SAN FRANCISCO

These and Other Important Features Fully Described in Catalog EG-40

March, 1938

GAS

Vol. XIV No. 3

FOURTEENTH YEAR OF PUBLICATION

LOS ANGELES
810 South Spring Street

CHICAGO
1064 Peoples Gas Bldg.

HOUSTON
306 Shell Bldg.

GAS Presents This Month

GAS Association meetings for 1938 started off auspiciously last month with the Mid-West Regional Gas Sales Conference in Chicago and the gathering of the southern men in Dallas for the Southern Gas Association convention. GAS representatives attended both meetings, and Craig Espy, who covered the Chicago event, appended to his report (Page 27) a note stating that he not only had a good time, but that the many fine papers presented assured him of the industry's brilliant sales future. Anatol Fomilyant, GAS News Editor, who has spent quite some time in the southwest territory, stated that he enjoyed greatly covering the very live meeting in Dallas (Page 30). Between the two stories (Page 29) is GAS camera, devoted this month to pictures of delegates from both meetings.

Thinking members of the gas fraternity have long been scanning the industry's future with an appraising eye, and it was the crystallization of thoughts on this search for more business and new markets—and the means by which these new markets and more business might be promoted—that demanded most attention at these conferences.

Among the key papers delivered in Chicago was one by Keith Davis of the L. J. Mueller Company, whose subject was Gas Air Conditioning (Page 24). At the same meeting, W. C. Beckjord, Columbia Gas & Electric Vice-President and General Manager, gave a panoramic view of the industry's sales future (Page 35). An important event of the past month was the announcement of the A. G. A.'s contest for builders and architects (Page 41).

Along this same promotional bend are the digested remarks of Harry Swenson, Peoples Gas Light and Coke Co., and C. L. Brockschmidt, Mississippi River Fuel Corp. Mr. Swenson (Page 33) discusses the importance and technique of good display work in publicizing gas; Mr. Brockschmidt (Page 31) discusses the hidden revenue possibilities in dump gas contracts.

George Wehrle of Public Service Company of Colorado, this month's Guest Editor, also considers the industry's problem in the light of the future, stating that faith and responsibility must be placed in young men—progressive young men who will not rest on the achievements of the past but will build from those achievements a greater future.

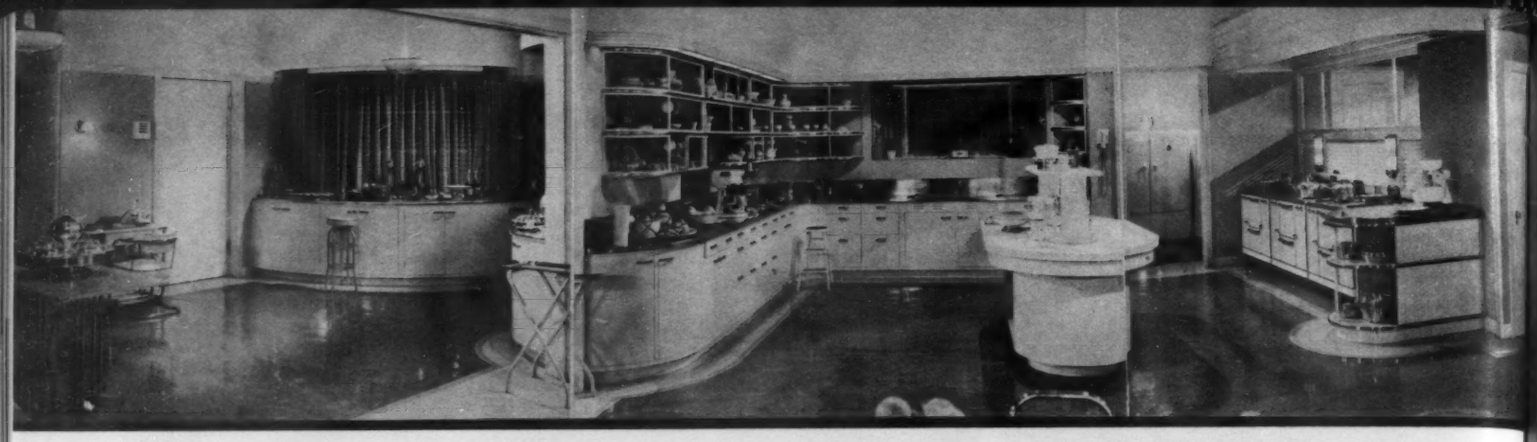
Advertising, too, receives its share of attention in this issue. The lead story this month by Deke Houlgate of the American Gas Association deals with the progress being made in bringing the gas kitchen and gas appliances to the attention of the widespread moving picture audience (Page 20). And it will be noted in glancing through the pages that the A. G. A. and the A. G. A. E. M. have been particularly active in inaugurating appliance sales drives and in stimulating interest in cooperating with the industry's national advertising campaign.

NATURAL gas again moved in on a large number of manufactured gas consumers when Fort Wayne, Ind., recently completed the changeover process. L. C. Heavner of the Northern Indiana Public Service Co. was kind enough to send us a complete description of the processes employed and the experiences undergone in making this change. (Turn to Page 22.)

More on the technical side are the digested comments of John W. Burg of The Connecticut Light and Power Co. on the construction of an all-welded gas holder (Page 32). Excerpts from a Bureau of Mines Committee report on the effect of manhole size on ventilation is published on Page 37.

Turning to the Butane-Propane News Department we offer an article on the odorization of liquefied petroleum gases by R. F. Foster of the Lone Star Gas Company (Page 61).

Next month GAS will preprint a number of the papers to be presented before the Pacific Coast Gas Association Spring Technical Conference which is to be held April 7-8 in Los Angeles.



Theater-goers throughout the country will be increasingly gas industry conscious after seeing the Hal Roach film, "Merrily We Live." The modernly designed kitchen used in the film prominently displays a three-unit, metal-topped range and a shining Electrolux.

Fun in the Kitchen

Two Mammoth Industries Cooperate and Millions Of Theater Goers See the Gas Kitchen in Action

By DEKE HOULGATE

Special Representative, American Gas Association

WHEN MOTION PICTURE studios in Hollywood have problems involving the use of gas or gas appliances, both on and off the screen, they call in Deke Houlgate, American Gas Association representative. In this article, Houlgate discusses a current picture play cycle which is requiring use of gas appliances in kitchen scenes, and explains how, when, where and why the gas industry is affected. Formerly with Southern California Gas Company, he has been connected with A. G. A. since 1936. —Editor.

WHEN Carole Lombard falls in love with the butler in "My Man Godfrey," she follows a farce-comedy tradition as old as the stage. The mistress-butler formula, upon which is based the plot of that screen comedy, is a comic situation dating probably from Aristophanes, and there is scarcely a generation of theatre-goers from the Age of Pericles on down which has not laughed at the contemporary version of this theme. Plautus and Terence borrowed it from Greek comedy for the entertainment of Roman audiences, and Ben Jonson copied it from them to delight the people of Queen Elizabeth's day. It was used continually by Moliere in his comedies written for the Parisian theatre later in the same century, and it appears, recurrently, in the work of more recent playwrights.

DEKE HOULGATE

Now the history of the development of plot structure for a certain type of farce-comedy can have no particular interest to the gas industry. Yet the revival of the time-hallowed master-servant formula on the modern motion picture screen is, strangely enough, of considerable importance to the industry, and for a reason that should be quite obvious. Servants, in fiction as well as real life, spend a lot of their time in the kitchen, and in a screen play where they appear as something more than supernumeraries, much of the action, necessarily, centers in and around the service quarters. And motion picture set designers, with their passion for realism to the last minute detail, insist on authentic service quarters, complete to the roast in the gas range oven and trays of ice cubes in the Electrolux.

Thus, the filming of such plays as "Servants' Entrance," "My Man Godfrey," "Tovarich," "The Baroness and Butler," and friend Bill Speyer's "Maid's Night Out," all of which revive elements of the oldest of comedy plot formulas, has created an opportunity for the gas business to show its wares. Successive screen comedies, in the current cycle built around this situation, have called for successively more lavish kitchen interiors, reaching an apogee in the current Hal Roach production, "Merrily We Live," in which fully 40 per cent of the action takes place in a kitchen that, for once, deserves every "super" the Hollywood press agent can suggest.

The story of a slightly mad family living in a very large, very modern, and very luxurious country estate, "Merrily We Live" calls for a kitchen set that would go with a home of this type. The designer, after the manner of Hollywood designers, was not satisfied with a mere perfunctory representation of a kitchen. He wished to create something that would be an attractive and plausible setting for the action, but at the same time he wished to produce a real kitchen. Members of the gas industry will be interested to know that he used actual designs of modern kitchens from the files of the local gas company home planning bureau.

The kitchen and butler's pantry in the set covers an area measuring approximately 20 by 40 ft., a space large enough for a living room in an ordinary home. Finished in white with severely stylized modernistic lines, the modern feeling is carried out in chrome trimming on shelf edges and monel metal in the drain board and sink. The kitchen cabinets

are metal, a product of Whitehead Metal Products Co. Bright California pottery is used for shelf decoration and to lend verisimilitude, while the cooking utensils are of shining aluminum.

A noteworthy feature is a built-in work table in the center of the kitchen. Borrowed from the commercial kitchen, this arrangement suggests that the modern home kitchen designer should not overlook the possibility of securing workable ideas from that source.

The "Merrily We Live" kitchen has, not one gas range, but three of them, set in a battery. The original design called for a large heavy duty range such as would go into a kitchen of this size. The director of the picture, however, wished to shoot some of the sequences across the gas range through a glass partition that divided the kitchen and dining room, something that would have been impossible with the large range. Called in for suggestions on the solution of this problem, the writer hit upon the idea of using three domestic ranges set in a battery, an arrangement that solved the immediate problem and proved to be even more in keeping with the set than a single large range.

There are, in addition, three large Electrolux gas refrigerators in use. Two of these are in the main pantry and the third is in the butler's pantry. The location of this latter box is interesting in that it is set conveniently opposite the salad bar.

Advertising executives of the local gas companies were so impressed by the beauty of this set and with the prominence it gave modern gas appliances that they began at once to sell the industry on an advertising tie-up program. This has led to a diversion of a million dollars worth of advertising space from the regular gas company advertising programs throughout the country, calling attention to this latest motion picture boost for the all-gas kitchen. In addition, the Tappan Stove Co. is going to use tie-in mats for their dealer advertising, while Servel, Inc. will cover their dealers nationally in a like fashion.

At the same time local organizations interested in promoting gas appliances have secured the set intact for display at the Southern California Home Show, to be held in Los Angeles from April 21 to May 1. Set up as the gas industry exhibit, it unquestionably will dominate the show. The housing exposition, to be held in the Pan Pacific Auditorium, is a co-operative enterprise of Los Angeles Building Contractors Association, Los Angeles Chamber of Commerce, and the Federal Housing Adminstration All the home building materials and equipment manufacturers in Southern California will participate, and the show is expected to draw fully a quarter of a million people.

Credit must go to Servel, Inc., Tappan Stove Co., Whitehead Metal Products Co., Hal Roach Studios and the Southern California Gas Co. for the fine spirit of co-operation which made it possible to preserve this display kitchen for the housing show. Hal Roach Studios, in addition to furnishing the set, will send a number of motion picture stars to make personal appearances in the kitchen. Among these will be Alan Mowbray, Patsy Kelly, Billie Burke and Bonita Granville, all appearing in the picture.

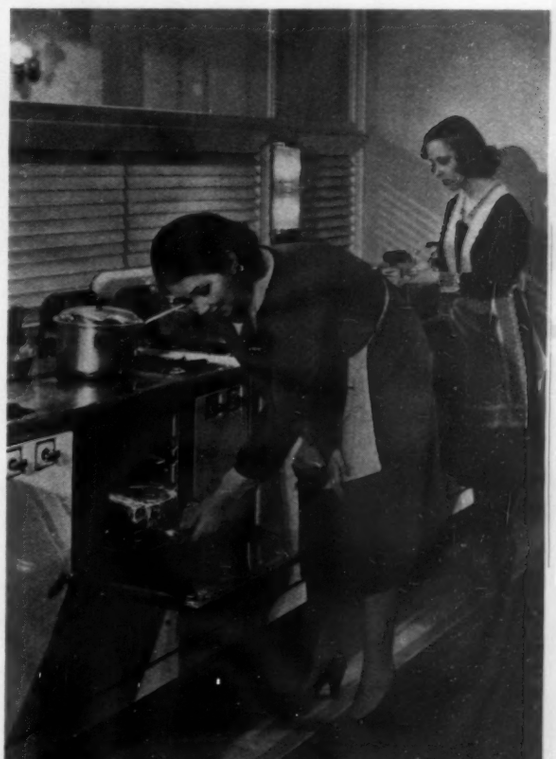
The tie-up with this picture is, of course, an outstanding example of cooperation between the gas industry and the motion picture industry. Nevertheless, it is indicative of the manner in which the current trend in picture plays is giving the gas industry a chance to publicize the most modern fuel. Certainly the fact that millions of housewives and breadwinners are given opportunity to see their screen favorites in close proximity to beautiful gas appliances will do the industry no harm. Accepted as the criterion for ultramodernity, Hollywood will help stamp gas ranges as modern also.

Among the hundred odd productions which displayed appliances on the screen last year were such outstanding screen successes as "Easy Living," "Oh Doctor," "Meet Nero Wolfe," "Everybody Sings," "Penrod and Sam," the "Jones Family" series, and Pete Smith's Technicolor Short, "Penny Wisdom."

And this is but one phase of the motion picture influence. Thousands of players, technicians and executives in Southern California's motion picture industry live in all-gas homes, and it is no exaggeration that the gas kitchen is the choice in Hollywood.

Samuel Goldwyn's home is equipped with a custom-built gas range and a two-door Electrolux. Fred MacMurray owns the latest model gas refrigerator. Darryl Zanuck, William Goetz and Joseph M. Schenck, all executives at Twentieth Century-Fox Studio, bought deluxe gas ranges in recent months. There is a range bearing the name plate of the Warner Brothers executive in H. B. Warner's home.

But to return to our earlier point, the gas industry can congratulate itself on the recent trend in motion picture comedies for the revival of the venerable master-servant formula has produced a lot of fun in the kitchen, which is the realm of gas appliances.



COMEDY

Humorous scenes in the kitchen focus strong attention on gas and gas appliances. Yet, even Patsy Kelly and Marjorie Kane find their kitchen work simplified by the new gas range and shiny aluminum wear.

APPEAL TO CHILDREN

One is never too young to learn about the all-gas kitchen. Spanky McFarland and Darla Hood of Our Gang fame know that if it were not for the gas range, they would not soon be enjoying those cookies.

Changeover

Fort Wayne Again Turns to Natural Gas Service; Pipe Lines from Texas and Kansas Fields Tapped

By L. C. HEAVNER General Superintendent of Gas Department, Northern Indiana Public Service Company

FROM 1887 until 1905, Ft. Wayne, Ind., was known as a natural gas town although the city's original gas service dates back to 1885 when the first company was organized by local citizens to supply manufactured gas to the city. All supplies for the original plant were received by boat over the Wabash and Erie Canal and unloaded at the plant wharf. The original franchise established a rate of $5.00 per M cf.

L. C. HEAVNER

In 1885, natural gas was discovered in northwestern Ohio and some of the citizens of Ft. Wayne investigated the prospects around the city. Four wells were drilled within the city limits, all proving failures. In 1887, a new company was formed to pipe natural gas from Blackford county, Ind. This supply was depleted in 1904, largely through waste, and in 1905 the company dissolved, and a new company was formed to supply manufactured gas to the city.

On July 1, 1936, the Michigan Gas Transmission Corp. completed a 22-in. gas line to Detroit which passed within 16 miles of Ft. Wayne. This line connects at Zionville, Ind., with a 20-in. line owned by the Columbia Gas & Electric Co. The Columbia's line was built in 1931 and connects with the 26-in. Panhandle Eastern Line at Dana on the Indiana-Illinois State Line. The supply of natural gas comes from the Texas Panhandle and Western Kansas.

Shortly after the Detroit line was completed, the officials of the Northern Indiana Public Service Co., because of the possibility of lower promotional rates, began to consider seriously the serving of natural gas in the Ft. Wayne division of the company.

Ft. Wayne, in 1925, had completed at a cost of $3,500,000.00 a new and modern combination coke oven and water gas plant of 9,000,000 cu. ft. capacity per 24 hours. It was realized that a considerable sum of money would have to be spent on the equipment over a period of years for repairs and maintenance. In making the decision to change over to natural gas, several problems had to be considered:

1. The economics and condition of the coke and other residual markets which have considerable bearing on the cost of gas had to be considered from a long-range viewpoint.

2. What was the most economical thermal value and type of gas to distribute? i. e., a mixed gas—composed of either water gas, blue gas or coal gas and natural of 800 B.t.u., or should straight natural gas be distributed? (A 570 B.t.u. mixed oven and water gas was being distributed to the city and adjacent territory).

3. A new rate structure had to be set up and various other problems met.

A complete study of the economics of the various problems presented was made by the engineering department of the company with the result that on May 1, 1937, a contract was entered into with the Michigan Gas Transmission Corp. for 15 years to supply natural gas to Ft. Wayne and adjacent territory. The Ft. Wayne division serves a population of 135,973. Its gas facilities include 283 miles of mains and 30,000 meters. In addition to serving Ft. Wayne, the towns and villages in the Ft. Wayne area included in the service are: Bluffton, Decatur, Ossian, South Whitley, Roanoke and New Haven.

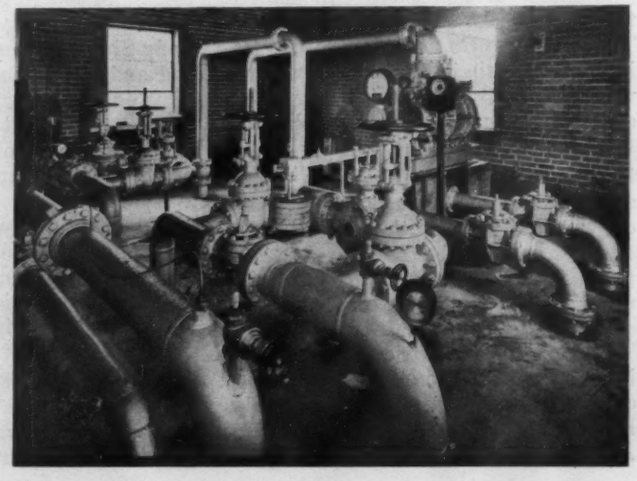
Immediately after the signing of the contract, planning was started for the changeover from a 570 B.t.u. gas to a 1000 B.t.u. natural gas. Considerable thought and study were given to the method by which natural gas was to be turned into the mains and appliances changed over. The basis of all planning in connection with the changeover was that the new gas should be made available with the least possible inconvenience to the customer. Three methods were considered:

1. The two-step, or raised pressure method, for the entire city.

2. The two-step or raised pressure by sections.

3. A complete changeover in one

◆



Interior view, taken during construction, of the metering and regulating station, Michigan Gas Transmission Corp., near Fort Wayne. Foxboro orifice meter set-up is shown at extreme left. Meter readings are transmitted by wire from this station to Hale Ave. Station. Crane gate valves and Nordstrom plug valves are seen in foreground.

◇

step by sections, i. e., turning natural gas directly into the mains of a section and purging manufactured gas at the same time. This method required only one adjustment of customers' appliances and we felt a better adjustment could be made with less inconvenience to the consumer.

The first and second method required two adjustments: first, to a 750 B.t.u. gas, and finally to 1,000 B.t.u. gas. The third, or one-step method was adopted. A map was then made up from the meter books, showing the number of meters in each route. From this map a sectionalizing map was made.

Formerly all gas in the Ft. Wayne division was supplied from the Ft. Wayne plant through a system of high pressure mains; however, with the arrival of natural gas, the supplying of gas from Ft. Wayne was discontinued due to the proximity of the Detroit line to some of the towns, the line passing within one mile of Bluffton and at another point crossing the line supplying Decatur. Bluffton, with 950 meters, and Decatur, with 1,100 meters, are now supplied through individual lines and meters.

Natural gas was turned into these towns on October 12 and 14, 1937. The change was completed in five days.

The city of Ft. Wayne itself has a population of 126,000. Its gas facilities include approximately 210 miles of mains, 28,000 meters and a storage capacity of 3,850,000 cu. ft. of gas (a 24-hour supply). To provide against an interruption of service, two water gas sets at the plant are being equipped for the manufacture of high B.t.u. gas.

For the purpose of changeover, the city was divided into seven sections with approximately 4,000 meters to a section. In order to isolate these sections, it was necessary to install 52 valves at various locations in the distribution system. Several temporary mains and regulators were also installed in order to be assured adequate pressure would be available in all sections.

A large part of the distribution system of Ft. Wayne is supplied by a 16-in. intermediate pressure main, carrying from five to six lbs. pressure. This main supplied all of the seven sections through district regulators. Necessary changes were made so that manufactured gas was supplied to this main at the plant and natural gas turned in at its terminal, located five miles from the plant, by a system of valves and regulators. Natural gas was supplied to the various sections as needed.

During the first week of October of last year, the Michigan Gas Transmission Corp. started construction of its six-in. high pressure line to Ft. Wayne. This line is 16-miles long, taking off the 22-in. Detroit line near the town of Hoagland, Ind. and running northwest to a metering station provided by the transmission company at the city limits of Ft. Wayne.

Gas is received in the metering station at line pressure (400 lbs.) where it is reduced by regulators to 25 lbs. pressure and measured by a high pressure rotary displacement meter. There has also been installed a Foxboro flow meter in series with the displacement meter to provide additional measurement if for any cause the displacement meter should be out of commission. As the gas leaves the metering station, it is odorized by an absorption type of odorizer, utilizing Pentalarm.

On September 7, the Northern Indiana Public Service Co. started the construction of two eight-in. lines from the south city limits; one line four miles long was built east to supply the industrial section of the city and to connect with the terminal of the old intermediate system, supplying the industrial section and assuring an additional supply at that point. The second line, 3.5 miles long, was built to the gas plant, from which most of the gas is distributed directly to the system.

Considerable thought was given as to whether the company should put one of its engineers in charge of the changeover of appliances or employ an engineer with previous experience in this type of work. It was decided to employ C. B. Farrell, of Jackson, Mich., who had charge of the changeover in Minneapolis and several other cities in the middle west.

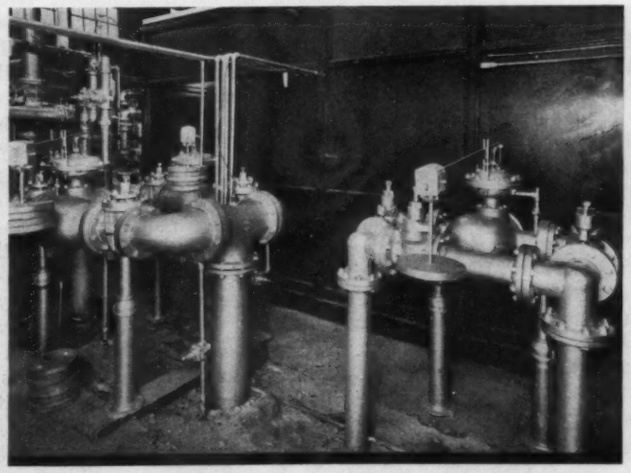
The majority of the men selected for the domestic changeover were local men having little knowledge of the work; 200 local men and 50 men from outside the city, who had worked on various changeovers all over the country were employed. The experienced men were used as crew foremen, special complaint men on industrial changeover.

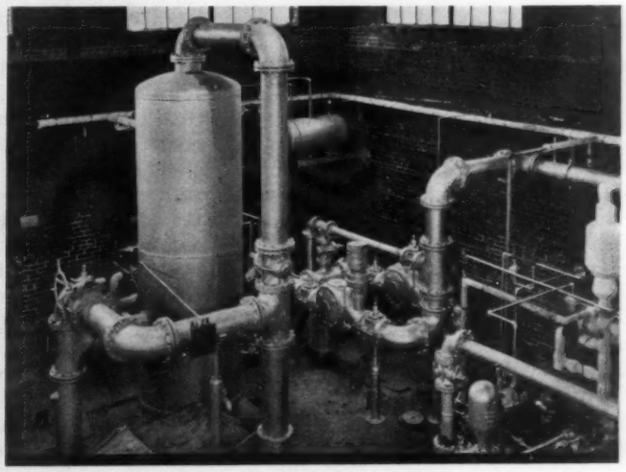
A school was set up at the company's service building to train the local men, some of the experienced men acting as instructors. As far as possible, all types of appliances in use in Ft. Wayne were installed in the school. Both manufactured gas and natural gas were connected up to each appliance so that a cross section of the type of appliance that would be found in the customer's home would be obtained by the men.

(Continued on Page 74)

BELOW, left, is the Hale Ave. Station, Northern Indiana Public Service Co., Fort Wayne, showing high pressure regulators. Emco regulators are used. Pictures were taken during construction.

AT RIGHT, interior view of Hale Ave. Station shows Blaw-Knox conditioner in left foreground, intermediate pressure regulators in center, at right, pumps for circulating water for holder heating.





Gas Air Conditioning

Public Acceptance Insures a Future Market; Industry's Job is to Perfect and to Sell!

By KEITH DAVIS

L. J. Mueller Furnace Company
Milwaukee, Wisconsin

MECHANICAL air conditioning must involve the functions of temperature control, humidity control, air cleaning, ventilation and circulation. Each is a study in itself and each plays its own part in the final effectiveness of the combination. As requirements vary, equipment needs may change. For example, winter air conditioning requires equipment which will supply humidity and heat, while summer air conditioning generally requires apparatus which will dehumidify and cool. There are some instances in which theoretical air conditioning may be approached through the liberal substitution of one function for another. The use of a desk fan does not reduce the air temperature but it does effect a cooling sensation. This knowledge that high relative humidity serves to increase, and low relative humidity serves to decrease effective or apparent temperatures may be used to good advantage when analyzing specific equipment requirements, for through a slight shifting of the maintained comfort point for summer or winter conditioning, it is often possible to establish a more economical balance in operating and investment cost, or to obtain approximate comfort conditions with the minimum of apparatus.

General Acceptance

Public interest is manifested by the general acceptance of air conditioning as a worthy and substantial contribution to modern life. Industrial conditioning for added economies in production, and comfort conditioning for health treatments, may represent a small field of endeavor but such experience has added materially to the stability and theoretical knowledge of the industry. Public acceptance of the rapid growth of this new industry, of its permanency and substantiality, is certainly indicative of two things: first, that customers' desire for this service has created a market; second, that the customer is uniformly pleased with the service so far made available.

A market does not exist superior to that established by the customer through desire, acceptance and confidence. The sales-conscious can find no field of greater opportunity.

Apparently there are a few in the industry who do not fully comprehend the part which gas fuel can play in this picture. These few individuals would seem a decade behind times for the gas industry is already in the air conditioning business. It is in there solidly and substantially. Its dominant position is justified by years of pioneering and development and is attested by gas industry representation on important air conditioning committees. Other fuel industries watch these circumstances with jealous interest and unappeased ambitions.

The magazine, *Oil Heat*, recently ran a summary of the gas summer air-conditioned 12-room combination home and office of a Cambridge, Mass. osteopathic physician. At the cost of approximately $2,300 a well was drilled, cooling coils connected, duct work rearranged, an adequate blower supplied, and a gas-fired dehumidifier installed. Through minimum reductions in dry bulb temperatures combined with the maintenance of a low relative humidity, suitable comfort conditions were provided for both the doctor's partially disrobed patients and for the doctor himself during the rather violent exertion connected with the administering of osteopathic treatments. Operating costs for the two months of July and August ran $17.00 for gas and $11.00 for electricity, the waste water being utilized for lawn sprinkling.

A.G.A. statistics indicate that two million homes in the United States are heated with gas. About 750,000 homes are equipped with central installations of which better than 50 per cent are gas-designed units. Additions are being made to this list at the rate of approximately 50,000 per year. Each such home owner has through the installation of automatic fuel, advanced one step closer toward the fulfillment of his desire for air conditioning in his home.

Winter Gas Conditioning

It may be the case that a few service men, salesmen and executives limit their sales appeals by thinking of a modern gas designed furnace as a heating plant. Such an unimaginative presentation would not encourage the home owner to purchase the best furnace in the world, burning the best fuel in the world if, like you and me, he secretly enjoys thinking of comfort conditioning in his home. "Heating Plant" implies equipment covered with dust, cob webs, and smoke in a dark basement corner. "Air Conditioning" implies something to boast about, a recreation room for the youngsters, a workshop for Saturday afternoon hobbies, plus greater comfort and health for the entire family. It is no wonder, then, that the prospect returns to the dealer who has presented a sensible picture of air conditioning benefits.

There is no justification for the belief that complete air-conditioning equipment need be installed at one time. Although many manufacturers indicate that almost 50 per cent of the gas units shipped comply with all the requirements of winter air conditioning, there is no reason why such equipment could not be sold piece by piece. An automatically controlled gas furnace physically satisfies the function of temperature control. A properly sized blower meets the functional requirements of circulation and ventilation. The filters which are generally a part of the blower unit usually suffice for air cleaning. The final winter air-conditioning requirements, humidification, can adequately be met through use of one of a number of automatic humidifiers made available

by gas-air-conditioning equipment manufacturers.

It is in connection with air conditioning that gas may be presented as the modern glamour fuel, the only heating fuel which requires no attention, which needs no machinery to aid combustion, which is constant in quality, and which is neither stored nor purchased until required. It burns quietly; it heats quickly. Finally, gas, of all the automatic fuels, most readily lends itself to sensitive temperature controls; to controls which provide varying and almost continual fuel input in such proportions as to just balance the rate of heat loss. With such evidence of superior service available, the controversy regarding competitive heating costs can normally be reduced to a secondary matter, for the trend will be toward first recognizing the service advantages made possible only through the use of gas.

While it is doubted that winter fuel costs can be materially reduced through the maintenance of a reasonable indoor relative humidity, there are many advantages to be gained through the regulation of the vapor content in the air. A constant relative humidity reduces shrinkage in wood floors and wall studdings, and tends to eliminate plaster cracks and the loosening of wall paper. The piano stays in tune longer. Water vapor in the air keeps glue joints from loosening in furniture. Rug fibres do not dry out and become brittle, then break off and form lint and dirt.

The gas industry deserves congratulations for its long term wisdom in recommending fuel economies such as insulation and storm windows, and in predicting—and in some cases even budgeting customers' seasonal fuel costs. Such customer service has required the employment of practical engineers versed not only in gas application but in air conditioning and building construction methods. With selfish interest extending only to the use of gas as fuel, gas companies should become sources of unbiased authority in planning the proper sequence of purchasing items of air-conditioning equipment.

Summer Conditioning With Gas

When it comes to summer air conditioning, the gas industry is twice blessed. Gas equipment offers better air conditioning normally at less operating cost, and at the same time offers appreciated summer load possibilities.

Gas comfort conditioning has unique sales appeal for it makes possible the continuous and individual control of the two usually required functions, dehumidification and cooling. A wide selection of equipment is available, and while the electrical industry of necessity is limited to the recommendation of a motor driven compressor, the gas industry offers a variety of methods and selects those particular units which most economically meet required conditions. Perhaps it is feasible to utilize a gas-fired boiler in conjunction with a steam jet or absorption system. Or, perhaps, analysis points to the use of a gas-engine driven compressor which not only duplicates the performance of an electric unit, but normally results in lower operating cost and increased effectiveness due to longer operating cycles made possible through automatic speed control of the engine. Perhaps this equipment may be used for both cooling and dehumidification, or possibly only for cooling in connection with a gas-fired dehumidifier. In the latter case cooling coil temperatures may be raised from 38° to 60° thereby increasing mechanical cooling equipment capacity ratings as much as 60 per cent and the ratio of cooling effect output to energy input by 75 per cent. Where city or well water is available for cooling at 70°, the service of a gas-fired dehumidifier may be utilized as the only necessary mechanical equipment.

ON THESE PAGES are published excerpts from a paper, "Air-Conditioning Trends" which was presented by Mr. Davis before the Twelfth Mid-West Regional Gas Sales Conference sponsored by the Commercial Section of the American Gas Association. The meeting was held at the Palmer House, Chicago, February 10, 11, and 12, 1938.

Whether a compressor, a steam jet, or a dehumidifier is used, the matter of cooling water is of importance because it is the water, not the equipment, which finally disposes of both latent and sensible heat. Here again the gas industry is fortunate, for it can economically use water at relatively high temperatures. After water has been used to remove the sensible heat from the air, it can be used again in the after-cooler of the dehumidifier. Condenser water from the gas-engine driven compressor need not be wasted, but can be used to cool the gas engine itself. The problem of high priced condenser water may be answered by the use of an evaporative condenser which reduces water requirements by 90 per cent and adds but five per cent additional load on the gas engine. Approximately 50 per cent of the total energy input to a gas engine can be salvaged, should it be desired for water heating purposes in laundries, restaurants, etc.

Markets

While the versatility and economies of summer conditioning with gas equipment has gained some recognition outside the industry through the publication of articles in magazines, there is much that remains to be done if the favor of the buying public is to be courted. Whether it be gas furnaces, blowers, dehumidifiers, or gas-engine-driven compressors, equipment is available which not only is quiet in operation, but is sufficiently attractive in appearance that it may be shown on display floors between snow white refrigerators and glistening ranges. Many installations have been made in gas companies' offices in such a manner that the operating unit may be used for demonstrating purposes. The neatly designed and installed 120-ton gas-engine driven conditioning equipment used in the Gas Building of the Dallas Pan-American Exposition of last summer has been of much publicity value. Throughout the country are other interesting examples of such use of gas fuel. Some of these are composed of gas-engine-driven compressors used in conjunction with a dehumidifier, some use dehumidifiers and well water for cooling; some, more elaborate, use a gas-engine-driven generator which supplies electric power for a dehumidifier, for fans, for deep well pumps, or for the refrigerating compressor. A large dehumidifier unit in the Palmer House, Chicago, assists in the summer comfort conditioning of 500 guest rooms. Much has been written about the first complete air-conditioned hospital which employs gas for comfort control. It is information such as this which should be passed on to the public.

There are also numerous industrial applications of gas fuel to process cooling and dehumidification. Constant relative humidity is important in printing plants, candy factories,

in lead pencil factories, in storage places of dried milk, cereals, and cosmetics. Bread will not mildew if it is cooled and wrapped in a room maintained at low humidity. Cool, dry air improves the lustre of jewels and thereby assists in their sales. Important papers in bank vaults and priceless manuscripts in libraries may be protected from mould and mildew. Restaurants, which have long been friendly customers of the industry are now finding air conditioning a matter of self-preservation. The motion picture industry is interested in gas heating and gas conditioning developments, not only from the standpoint of dehydration as applied to film manufacturing, drying and storage, but to the use of separate dehumidification as an answer to the problem of high, sensible heat loads in the afternoon and high latent heat loads during evening performances in theaters.

Last reports of the electrical industry indicate that installations average 22 connected horsepower and operate approximately 1200 hours per summer season at 2.8 cents per kw. hr., these figures including commercial installations. No doubt this revenue has been appreciated by the electric industry, but the time may soon come when the sharp peak in summer load will call for an enormous increase in plant and line investment, out of all proportion to total kw. hrs. which can be consumed during the short summer conditioning season. This particularly applies to the home air-conditioning field where the operation of electric-driven compressors will call for the tremendous expense of providing polyphase power circuits throughout residential districts.

In contrast, a gas-engine-driven compressor will require from 35,000 to 70,000 B.t.u. input per hour per average home, a dehydrating installation requiring even less. Such demands do not mean additional capital investments for gas companies, yet the load is comparable with that of house heating. It hardly appears reasonable that the electric company should seek this business through the lowering of rates below the present residential average minimum of 3.1 cents per kw. hr. which may be considered as approximately equivalent to gas at 28 cents per therm—$1.50 per thousand for manufactured gas or $2.80 per thousand for natural gas.

As previously indicated, the versatility of various types of gas equipment frequently makes possible such grouping of functions that the final cost of air conditioning may vary greatly. It is always a question of weighing the economies of investment in equipment against savings in operating expense. Such problems are matters for the unbiased consideration of the gas air conditioning engineer. Here again is found the need of specialized knowledge, for actually it is only in the sales department office of the unit cooler manufacturer that the air-conditioning package-purchase propositions are being discussed at the present time. Applications vary, and with present knowledge it is difficult to conceive of one unit which with efficiency and economy will meet the problems of restaurant and home alike under the varying high and low conditions of different humidity and temperature areas, as well as meet the obstacle of varying costs and temperatures available in cooling waters. Again, the engineer can prescribe such economy measures as may reduce equipment size and operating expense. The use of window awnings, venetian blinds, or curtains may reduce the investment and operating costs as much as 30 per cent. The thickness of wall insulation should be recommended on the basis of heat lag characteristics.

As an example of such service the case of a steam table installation in Lansing, Mich., is cited. In this instance a fuel saving of approximately 40 per cent was effected and approximately two tons of cooling effect was removed from the computed air-conditioning load. Not only did the fuel saving within a few months pay for the total cost of the immersion burner installation, but a $500 to $800 investment may be saved due to smaller load requirements on air-conditioning equipment. Such sensible suggestions not only make it possible to quote on smaller jobs at lower installed and operating costs, but leave a decidedly favorable impression with the prospect.

Fortunately, the comfort era has only begun. Present acceptance is but a prelude to brilliant expansion. Future trends are only now being plotted. The swing is toward automatic forced air heating and soon winter air conditioning will become as essential to the home as is the modern bathroom. The gas industry while capitalizing on this trend, may logically guide it toward the ultimate of year-round service. Above all, gas heating must be advertised, prompted, sponsored, and *sold*, for it is the gas heated home which offers the best market for future additional loads.

The gas industry must face facts. While the air-conditioning trend has increased the market, it has also increased the competition. If additional business is desired, ambitious dreams will not suffice. Investments must be made in time, effort, and money. Force must be given to development work in employee training, in customer education, in acquiring skill in the selection, application, and installation of equipment which through operation on gas will serve best and satisfy most. Through the continuous promotion of gas as the logical fuel for air conditioning, the gas industry can safely and surely build today's and tomorrow's market into a sizable and profitable year-around, and year-after-year future load.

CALENDAR

March, 1938

Midwest Hotel Show — Palmer House, Chicago, Ill., March 1-4.

A. G. A. Industrial Gas Sales Conference —William Penn Hotel, Pittsburgh, Pa., March 7-8.

Wisconsin Utilities, Commercial and Technical Division, Gas Section Conference —Hotel Schroeder, Milwaukee, Wis., March 16-18.

Liquefied Petroleum Gas Association, Inc. Annual Meeting—Hotel Jefferson, St. Louis, Mo., March 21-22.

Pacific Coast Gas Association, Spring Sales Conference—Los Angeles, Calif., March 24-25.

April, 1938

A. G. A. Distribution Conference—Netherland Plaza Hotel, Cincinnati, Ohio, April 4-6.

Pacific Coast Gas Association, Spring Technical Conference—Los Angeles, Calif., April 7-8.

Midwest Gas Association—33rd Annual Convention, Hotel Lowry, St. Paul, Minn., April 11-13.

Eastern District, American Petroleum Institute—William Penn Hotel, Pittsburgh, Pa., April 14-15.

American Chemical Society, Division of Gas and Fuel Chemistry—Dallas, Texas, April 18-21.

Missouri Association of Public Utilities—Jefferson Hotel, St. Louis, Mo., April 20-22.

May, 1938

Pennsylvania Gas Association—Sky Top Lodge, Sky Top, Pa., May 3-5.

A. G. A. Natural Gas Department—New Orleans, La., May 9-12.

International Petroleum Exposition—Tulsa, Oklahoma, May 14-21.

Indiana Gas Association 1938 Convention —Hotel Gary, Gary, Ind., May 16-17.

A. G. A. Commercial and Hotel and Restaurant Sales Conference—Belmont-Plaza Hotel, New York, N. Y., May 23-24.

American Petroleum Institute, Midyear Meeting—Wichita, Kan., May 23-25.

A. G. A. Production and Chemical Conference—Hotel Pennsylvania, New York, N. Y., May 24-26.

Association of Gas Appliance and Equipment Manufacturers — The Greenbrier, White Sulphur Springs, W. Va., May 25.

June, 1938

Canadian Gas Association—31st Annual Convention, Royal York Hotel, Toronto, Ont., Canada, June 9-10.

Society of Chemical Industry, Annual Meeting of all Sections—Ottawa, Canada, June 20-22.

New England Gas Association Sales Conference—Viking Hotel, Newport, R. I., June 23-24.

American Home Economics Association—William Penn Hotel, Pittsburgh, Pa., June 28- July 1.

September, 1938

Pacific Coast Gas Association—45th Annual Convention, Santa Barbara Biltmore Hotel, Santa Barbara, Calif. Week of September 12.

October, 1938

A. G. A. Twentieth Annual Convention—Atlantic City, N. J., week of October 10.

Mid-West Gas Men Discuss Sales Problems, Industry Trends at Chicago Meeting

By CRAIG ESPY Assistant Publisher, G A S

WHAT made this year's Mid-west Regional Gas Sales Conference held in Chicago, February 10, 11, and 12, the best one ever held? Some answer by saying, "The general showmanship of all presentations and speakers, the selection of topics and the fine organization work of those in charge."

"There is no need to fear electric competition where the gas range is sold aggressively," suggested Bernard T. Franck, general chairman of the conference, getting right down to cases in his opening remarks. At the first session of the conference, he added that national advertising plus the promotional efforts of individual gas companies are waking-up housewives to the superiority of the gas range. The competition we now have should stimulate rather than deter us he said but asked that the industry be eternally vigilant for there is always someone to take away its business.

"Forget quotas and place the emphasis on men, young men," he said at another point, in admonishing the audience to consider the enthusiasm of youth; hire young men, train them carefully and encourage their initiative, for young men are needed on the sales front.

Walter C. Beckjord, vice president and general manager Columbia Gas & Electric Corp., was next introduced as key note speaker. He placed special emphasis upon the trends of industries in general and urged his hearers to keep abreast of the needs of the customer as a means of service and survival. He also urged the increasing of promotional efforts and expense, where need be, and recommended a larger fund for national advertising. Excerpts from Mr. Beckjord's remarks appear on page 35 of this issue.

R. B. Brown, president Milwaukee Gas Light Co., was introduced to preside over an hour's discussion on national advertising. T. J. Strickler of the national committee on advertising could not be present. Hugh Mitchell of McCann-Erickson, the agency preparing and placing the advertising, spoke on the progress of the campaign.

Charts which he showed traced the decline in domestic sales of the ice industry and the rise of mechanical refrigeration, the trend in the oil and coal heating industries, etc. "Changes in acceptance do not just come about," he pointed out. "There is a selling job necessary."

He spoke of the opportunity to widen the public acceptance of gas by selling all employees and dealers on the national advertising program. And by cooperating locally with the campaign, "A thousand miles of travel begins with a step," he quoted, saying that the gas industry had taken with its national advertising the first step in a long journey.

B. T. FRANCK

L. W. JOHNSON

There followed a series of three-minute talks on national advertising. Mildred Clark, Oklahoma Natural Gas Co., national chairman of Home Service, explained "How Home Service is Making Use of National Advertising." Donald Hoover, advertising manager of Public Service Co., of Northern Indiana, made practical suggestions for bettering the campaign and urged a larger national advertising appropriation. John M. Hollingsworth, advertising manager, United Light & Power Engineering Corp., suggested ways of tieing-in with the national program.

L. W. Johnson, The Peoples Gas Light & Coke Co., vice chairman of the conference, presided at the first afternoon meeting. Hall M. Henry, chairman of the sub-committee for promotion of the Certified Performance Range and associated with Utility Management Corp. of New York, was the first to be introduced.

He described the features of the new range which will be officially launched next August. He said it will properly interpret gas values to the customer and will provide the gas industry with a unified sales theme. After telling about the plans for promoting the range he recommended that we begin now to educate our employees, salesmen and dealers with full facts regarding the new range.

Wallace M. Chamberlain, Grand Rapids Gas Light Company next gave a full account of the successful "Old Range Round-up" recently held in Grand Rapids by which the gas company sold 1100 gas ranges in 34 days. Following the talks, color movies were shown of the round-up parade, a featured event of the Round-Up.

Frederick A. Kaiser of the Detroit-Michigan Stove Co., talked on the subject, "Proper Sales Supervision as an Aid to Competitive Selling." In speaking of modernity, the summation of the electric range appeal, he pictured the housewife as thinking of gas in terms of her mother sweating over a kettle and of electricity in terms of everything modern, the radio, toaster, vacuum cleaner, etc. He took point after point of supposed superiority of the electric range and exploded it.

Housewives are not buying electric cooking, he pointed out. It is being sold to them. He also dealt with hiring, training and supervising salesmen, gave the steps to successful selling and presented a special need for better sales demonstrations.

"My Wife Buys a Refrigerator", the first of several interesting skits, featured on the program, came next. This was introduced by Gordon E. Bloom of Servel, Inc. and was enacted by representatives of Grand Rapids Gas Light Co. It had previously been presented 27 times in Grand Rapids and to 4,000 women of the city. Originally written by Servel, Inc., it was partially re-written by Grand Rapids Gas Light Co. to suit special needs. It was presented under the direction of Lucile Hall, home service director of the Grand Rapids company. It carried a splendid appeal and was enthus-

iastically received. The hero and heroine, of course, bought the Electrolux.

Thus ended the first day with C. V. Sorenson of Corporation Services, Inc., Indianapolis, coming up as the first speaker on the following day. Elliott G. Peabody, Citizens Gas & Coke Utility, presiding, introduced him as the "spark-plug" of the Indiana water heater activities. It was pointed out that the Indiana Gas Association is doing an excellent piece of work, not only in selling water heaters but in keeping them in service. Mr. Sorenson's subject was "The 1938 Water Heater Prize Parade," the 10-months joint campaign of the A. G. A. and the A. G. A. E. M.

He pictured the success of this campaign and mentioned that 2500 salesmen in 300 gas companies are now registered for the 1938 Prize Parade. He once sat in on a Midwest Council meeting, he said, that questioned putting a range cooking paper on the program because the cooking load seemed to belong naturally to the gas industry. "Let us not feel that our water heater position is secure because of superior performance," he urged. He also asked that special thought be given to ways and means of selling the consumer on using the water heater after it was installed. This he recommended as a means of sustaining the business curve.

A logical follow-up to the Sorenson paper was the water heater skit, "Foil the Furmites." M. M. Scott, Ruud Mfg. Co., wrote the skit and it was enacted by a group from the Grand Rapids Gas Light Co. The skit will be presented before Grand Rapids customer-groups commencing in the Spring.

The gas man and the gas water heater are the heroes of the skit, pointed out Lewis Spears of Ruud, who introduced the characters. The villains were King of the Furmites, Furmite the Ruster, Furmite the Banger, Furmite the Freezer, Furmite the Robber, Furmite the Joker. We venture to say that this scene is not one that will be easily forgotten by the gas men or by any housewife who sees it.

"New Homes" Program

H. D. Valentine, The Peoples Gas Light & Coke Co., in his paper, "Gas Merchandising in New Homes," outlined the national program under way and presented results of an original research he had made in the Chicago area. The findings were that the real estate operator, architect and home-builder are misinformed on the price of our service and on its conveniences. A realtor, he talked to, feared to advertise a home-for-sale as gas heated because it might drive the prospect away due to heating-cost-fear. He urged that the industry sell its services on the basis of easily digestible facts and on plus values.

Particularly related to Mr. Valentine's speech was a skit entitled, "Tales of Scoff-Men." Written and presented by Mr. Valentine, the skit dramatized some of the ideas given in his paper. It showed the customer's need for gas heating service, his general lack of appreciation of the value of the service, his misinformation on costs. It ended happily with the signature on the dotted line. A group from Peoples Gas enacted the play.

The Friday morning session was brought to an enthusiastic close with the address of Elmer Wheeler, president, Tested Selling Institute, New York. His talk on "Tested Selling Phrases," while being directly applicable to department store merchandising, left the strong impression of the need for a carefully chosen approach to the customer and prospect. "Your first 10 words", said Mr. Wheeler, "are more important than your next 10,000."

Friday Conference

E. R. Felber, Madison Gas & Electric Co., Madison, Wis., presided over the Friday afternoon conference, introducing Dean W. Flowers, Muskegon Gas Co., as first speaker. Mr. Flowers spoke upon the inter-relation of "Sales and Service." He also outlined management's function in tieing them together and gave rules for hiring, for training and for securing cooperation.

Harry Swenson, The Peoples Gas Light & Coke Co., next dealt with "Modern Gas Displays," referring particularly to the theory and reason for display. He brought freshness of viewpoint and generous enthusiasm to bear upon the subject, dealing especially with the theory and reason for display. (See page 33).

Keith Davis, L. J. Mueller Furnace Co., Milwaukee, followed with a splendid account on air-conditioning trends. (See page 24). Then followed the skit, "Tales of Scoff-Men," which brought down the curtain on the second day of the conference.

In high praise of the Home Service programs and the function of Home Service activity let it be pointed to with pride that the session of this group, falling on Saturday morning, was one of the best of the conference in point of interest and attendance.

Mattie Rouse, Consumers Power Co., chairman of Mid-West Home Service activities, presided over the meeting introducing first, B. T. Franck, chairman of the conference. Mildred Clark, Oklahoma Natural Gas Co., national chairman of Home Service was also introduced. In a brief talk Miss Clark touched upon the factors making up the true value of home service and outlined its present status.

Cooking School Activity

Miss Jessie McQueen, American Gas Association, introduced D. S. Ford and W. R. Carylon of Consumer's Power Co., who described the cooking school activity of their company. *G A S* will describe in a later issue the stage setting and the traveling scenery brought from Consumers Power headquarters in Michigan to be set-up for Saturday's performance of "Mrs. Modern and Mrs. Antique" presented before the conference.

Miss Rouse enacted the role of Mrs. Modern and Cornelia Bickford the part of Mrs. Antique. Mrs. Antique got many laughs as she, using an outmoded gas range tried to compete against Mrs. Modern who used the latest gas cooking equipment. This skit ended happily with Mrs. Antique calling her husband and demanding a new gas range.

Fred Kaiser, Detroit - Michigan Stove Co., who had spoken on the first day of the conference, was called upon following the skit. This time he spoke on "The Psychology of Selling as applied to the Home Service Call". He advocated that every home service worker have experience on the sales floor, and particularly stressed the fact that the range sale was not fully made until the housewife knew everything about it and how to use every modern feature.

Another skit was presented by Karen Fladoes, home service department, The Peoples Gas Light & Coke Co. The skit written by Betty Stuart Smith showed how the home service demonstrator connects up the questions asked by visitors with the tangible sales features of the range, water heater and refrigerator in such a way as to give emphasis to the sales points.

One of the most enjoyed features of the entire conference was given by Irving J. Lee of Northwestern Uni-

(Continued on Page 70)

S.G.A. Convention and Sales Conference
Adolphus Hotel - Dallas, Tex. Feb. 16-18-1938 -
A MODERN HOME SERVANT FOR ONLY A FEW PENNIES A DAY

The delegates sit in general sessions at the Southern Gas Association and Sales Conference, Dallas, Texas.

GAS CAMERA

The Candid Camera Catches a Few of the Mid-West Conference Delegates

F. X. METTENET, vice-president, Peoples Gas Light and Coke Co. and **BERNARD T. FRANCK**, Grand Rapids Gas Light Co., chairman of the Mid-West Regional Gas Sales Conference.

TOM BULLION, Detroit-Michigan Stove Co. and **F. M. ROSENKRANS**, new business manager, The Gas Service Co., Kansas City, Mo. are snapped as they enter the meeting room.

H. C. PORTER acts as sales manager for the Kansas City Gas Co., in Kansas City, Mo.

GEORGE SCHLATTER, sales manager, the Laclede Gas Light Co., St. Louis, Mo.

CHARLES LUTHER, Peoples Gas Light and Coke Co., has had charge of conference registration for the past 11 years.

KAREN FLADOES, home service director, The Peoples Gas Light and Coke Co., contributed to the convention program.

Attending session: (left) JESSIE McQUEEN, American Gas Association, and **MILDRED CLARK**, home service supervisor, Oklahoma Natural Gas Company.

At right: Two from the home service department of Consumers Power Co., Jackson, Mich., Mrs. CORNELIA BICKFORD and MATTIE ROUSE, chairman of the Mid-West Home Service committee.

Photographs of Mid-West Conference Delegates, courtesy General Gas Light Co.; Cameraman, Nat Blinks

Southern Gas Association Technical, Sales Sessions Attract Record Attendance

CHESTER L. MAY

N. C. McGOWEN

By ANATOL FOMILYANT

News Editor, GAS

WITH the opening of the 1938 Southern Gas Association Convention and Gas Sales Conference on February 16, more than 400 delegates were welcomed by Joseph F. Leopold, Dallas supervisor of public utilities, and Chester L. May, Southern Gas Association president, vice-president and general manager of Community Natural Gas Co., Dallas, Texas. Attendance at this year's convention was greater than in previous years, and registration day found arriving representatives standing in line to register at the Hotel Adolphus, Dallas, Texas, convention headquarters during the sessions which continued through February 16, 17, and 18.

The general session was opened on Wednesday morning, February 16, by the president, Chester May, who addressed the session on "A Streamlined Industry." Following Mr. May's address, N. C. McGowen, president of the American Gas Association, spoke on "Sales" as the gas industry's present most important need. R. S. Wenner, vice-chairman, Gas Engine Power Committee, A. G. A., and L. W. Crump, Oklahoma Natural Gas Co., also addressed the opening session.

The opening meeting of the Gas Sales Conference, held the afternoon of February 16, dealt with gas appliances for the home. An interesting address was presented by Clayton Rand, Massachusetts publisher, on "Combustibles," in which he enlarged on the idea of "These are explosive times." He attacked the governmental attitude toward utilities.

Technical Session

The Technical Section of the Association also met on the afternoon of the opening convention day. With E. C. Kollock, Atlanta Gas Light Co., Atlanta, Ga., presiding, the following papers were presented: "Variable Gas Load Measurement with Automatic Control," by C. E. Terrell, Southern Natural Gas Co., Birmingham, Ala.; "Carbosealing Cast Iron Mains," by Aaron Bush, Alabama Gas Co., Birmingham, Ala.; and "Modern Methods of Selecting and Installing Pressure Regulators," by Allen D. MacLean, Pittsburgh Equitable Meter Co., Pittsburgh, Pa.

J. F. Quinlan, director of the Home Appliance Planning Bureau, A. G. A., expressed the keynote of the second general session, Thursday morning, February 17, in his address on "Home Planning." He discussed the A. G. A. national gas advertising and publicity program, designed to match the "model house" program of the electrical industry. Mr. Quinlan said that the industry could profit as greatly from this co-operative program as the power interests did from the 8,000,000 visitors to their 600 model homes scattered over the country. This campaign, he declared, will make the public gas conscious (see page 41).

Following Mr. Quinlan's address, the Home Service Program was presented with Margaret Marable, assistant home service director of Servel, Inc., as chairman. One of the highlights of this program was the exhibition of a mechanical demonstration cabinet for appliances by Nell Read, San Antonio Public Service Co. The cabinet recorded talks regarding the appliances in the cabinet. Miss Read gave a running description of how the cabinet is used in cooking schools. Included also in the program was an entertaining "home service call" skit, "There's Gold in a Knock," presented by Louise Anderson and Doris McKnight of the Oklahoma Natural Gas Co.

On the afternoon of February 17, the second meeting of the Gas Sales Conference was held with L. L. Baxter, Arkansas Western Gas Co., Fayetteville, Ark., as presiding officer. Devoted entirely to appliance sales promotion, the keynote of the afternoon's program was expressed by W. E. Leverette, Nashville Gas and Heating Co., Nashville, Tenn., in his speech on "Dramatizing the Gas Water Heater Story." According to Mr. Leverette, modern gadgets are taking the conveniences of city utilities to the country at a rapid rate and at the same time are creating new problems for distributors. He urged dealers to emphasize water heater service, and to sell numerous gas-consuming gadgets as the most business is to be gained from providing low-cost service that will build the volume of business by the increase of consuming units.

Prominent Speakers

Other speakers of the afternoon were C. H. Zachry, Southern Union Gas Co., Dallas, Texas; H. V. Potter, Oklahoma Natural Gas Co., Tulsa, Okla.; L. M. Taylor, Mississippi Power and Light Co., Jackson, Miss., and W. A. Hudson, Houston Gas and Fuel, who spoke on the National Refrigeration Corp. and the nation-wide gas refrigeration selling campaign, opening March 1 (see page 40).

Meeting at the same time as the Gas Sales Conference was the Industrial Gas Forum with F. S. Kelly, Arkansas Louisiana Gas Co., Shreveport, La., presiding. Speakers for the afternoon included E. P. Kraemer, Gas Engine Power Committee, A. G. A., who presented a paper on "Gas Engines for Air-Conditioning from the Sales Standpoint," J. I. Cormany, Gas Service Co., Kansas City, Mo., and Jack Brockschmidt, Mississippi River Fuel Co., St. Louis, Mo. Mr. Brockschmidt had as his subject "Dump Gas Contracts and Their Possibilities" (see page 31).

The opening address of the closing General Session, held Friday, February 18, was "Trends," by L. B. Denning, Lone Star Gas Co., Dallas, Texas. Mr. Denning urged that there be an accounting, auditing, and budget system in the Texas state government. "The people should have a

(Continued on Page 64)

Off-Peak Sales as a Control Of Pipe Line Load Factor

● C. L. BROCKSCHMIDT, combustion engineer, Mississippi River Fuel Corp., St. Louis, Mo., in a paper, "Dump Gas Contracts and Their Possibilities," presented before the Industrial Gas Forum of the Southern Gas Association and Gas Sales Conference, Dallas, Texas, February 16-18, 1938.—(Abstract by GAS).

THE expansion of natural gas transmission systems in recent years has greatly increased investment per unit of capacity and magnified the importance of pipe line load factor as a vital element in long-line operation. Companies serving Southern markets are especially interested, because the relatively short heating season may result in a poor annual load factor for the pipe line. This paper deals with the control of annual load factor through the medium of interruptible off-peak sales.

In a broad sense there are two kinds of loads available, uninterruptible or firm sales and interruptible off-peak sales, commonly known as "dump" load. Domestic and commercial business properly falls in the first class as well as industrial business which is technically interruptible during emergencies but which is actually never taken off. Such business makes up the peak demand on coldest days. For the purposes at hand, interruptible off-peak sales are considered as new business deliberately contracted with the understanding that it will be interrupted on demand and which will not increase the peak day already established.

To better understand the problem let us take as an example a hypothetical pipe line having a daily capacity of 100,000 M cf. (see Table No. 1).

Thus, in this case it is possible to almost double the annual sales of the pipe line without increasing its capacity or in any way affecting its maximum daily demand. If the off-peak load can be sold at a profit of only 2 cents per M cf. the net revenue to the company is $325,000 per year. Such business is so patently worthwhile that it is worthy of consideration in a different light from ordinary industrial sales.

It is to be expected that concessions must be made to compensate for the inconvenience of burning two fuels and changing from one to the other on short notice. The cost of additional fuel handling and firing equipment must also be absorbed.

For rate making purposes only the incremental costs of delivering the gas are included in the following:

(a) cost of gas in the field; (b) increased labor and fuel costs incidental to pumping the off-peak gas; and (c) installation and service costs. All fixed operating charges which would be maintained regardless of the volume of gas transported are excluded.

The ideal installation is a combination gas and fuel oil firing system, for these fuels are interchangeable with a minimum of time and trouble and since firebox alterations are usually unnecessary, installations costs are low.

Some powdered coal installations are adaptable to combination burners, others require extensive furnace changes. Stoker-fired boilers are generally the most expensive to equip as the stokers must nearly always be removed and the firebox relined to suit combination oil and gas burners. The converted gas boiler will invariably carry a higher rating, and it is often possible to carry 75 per cent or more of a plant's steam load on one-half of its boilers. This fact is useful in dealing with off-peak consumers whose load may be partially seasonal in character and the load factor poor. It is important that the annual load factor of an off-peak consumer be above 80 per cent if that consumer is to be of much value for filling in summer valleys. A poor load factor can be improved by base-loading gas equipped boilers to supply 75 per cent of the average steam requirements, leaving the other boilers to meet the "swings."

The chart (Fig. 1) showing the trend of weekly average send-out plotted against the weekly average mean temperature has been found useful as a means of predicting peak demands several months in advance. It will be noted that weekly average sendout is a logarithmic function of the daily mean temperature. All points fall on the curve within 5 per cent, which is accurate enough for estimating purposes. The average daily send-out through each week was chosen as a unit rather than indi-

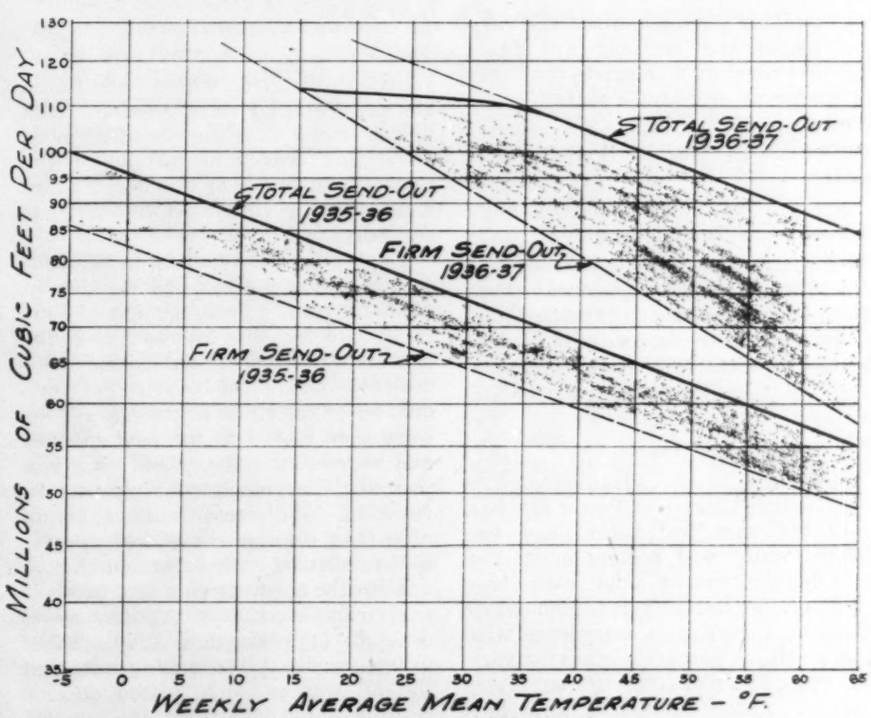


FIG. 1. Trend of weekly average send-out during winter.

TABLE NO. 1. Hypothetical Pipe Line With 100,000 M cf. Daily Capacity

	Peak Day M cf.	*Annual Load Factor*	*Average Day In M cf.*	*Annual Sales In M cf.*
Potential Annual Sales....	100,000	100%	100,000	36,500,000
Actual Sales, Classification:				
(a) Domestic & Com'l..	70,000	35%	24,500	8,942,500
(b) Industrial	30,000	70%	21,000	7,665,000
Total Firm Load.....	100,000	45.5%	45,500	16,607,500
Unused Capacity		54.5%	54,500	19,892,500
Firm Load	100,000	45.5%	45,500	16,607,500
Interruptible Off-Peak		76.5%*	44,500	16,242,500
Total Connected Load	100,000	90.0%	90,000	32,850,000

* The annual load factor of most large volume industrial loads considered for off-peak service will be nearer 85 per cent, but assuming that the load will be interrupted for 30 to 40 days each heating season or 10 per cent of the year, the annual load factor becomes .90 × 85 per cent = 76.5 per cent.

vidual days because in the particular example considered the load is cyclic in character, being heavy the first part of the week and declining to a minimum on Sunday, only to pick up again on Monday and Tuesday. During the first half of the week the available line storage is drawn upon heavily and replaced during the week-end.

Building an All-Welded Water Seal Gas Holder

THE fabrication of water seal gas holders by welding instead of riveting is a comparatively new development with certain distinct advantages, the chief ones of which are enumerated as follows:

1. Greater strength, since the various plates and sections are fused together forming a complete container as strong as any single plate,

2. Lower Cost. Size for size a welded holder costs less than a riveted holder.

3. Less possibility of leaks, since the container is continuous due to the welds.

4. Less noise during construction. This is particularly advantageous when holders are being built in residential or semi-residential sections.

5. Painting can be done easier and better.

6. Better appearance.

Realizing these advantages The Connecticut Light and Power Co. has, over the past two years, had two welded water seal holders built. The first holder was of small capacity—50 M cf. for use as a relief holder at Putnam. Based upon experience with this small job and after studying various other types of construction, it was decided to erect a 300 M cf. all welded water seal holder in the company's

● **JOHN W. BURG, district engineer, The Connecticut Light and Power Co., Winsted, Conn., in a paper, "Construction of an all-welded 300 M cf. Water Seal Holder," presented before the Operating Division of The New England Gas Association, Boston, Mass., January 7-8, 1938.—(Abstract by G A S).**

Winsted district where additional storage capacity was needed. This holder went into service December 1937, and was constructed by the Cruse-Kemper Co. of Ambler, Pa., on a foundation furnished by the gas company.

To obtain a good footing in the loose soil, a ring of concrete 86 ft. 6 in. in diameter with a cross section of four ft. by two feet was laid as a base for the side wall. Sectional forms were built to enable the pouring of one-quarter of the circle at one time. They were then moved to the next quarter and so on until the whole ring was poured. The completed ring was 84 ft. 3 in. in diameter with a height of 9 ft. 6 in. and a width of two ft., well reinforced with deformed bars.

With the concrete ring and manhole walls completed it was necessary to draw in approximately 1800 yds. of gravel for fill. After making sure that the fill was properly placed and no settling would take place, the top concrete surface was laid in one pouring. The thickness of this top was 12 in. at the center, increasing to 15 in. on the sides and reinforced with steel road mesh.

With the foundation completed, the actual work of erecting the holder began, by first laying the various sections of the tank bottom on stilts about two ft. above the foundation. The outer course consisted of ⅜-in. steel plates with all radial joints double welded butt. The balance of the bottom consisted of ¼-in. plates with all joints double welded lap with continuous fillet welds on both under and upper sides. Before lowering the completed tank bottom on to the foundation the under side was given two coats of paint; the first coat a special priming paint and over this a coat of red lead. This seemed to be a reverse procedure but was highly recommended by one of the large paint manufacturers. A one inch sand cushion was also spread out on the foundation for the bottom to rest on.

The order in which the rest of the holder was built was no different than for riveted construction.

An interesting departure in the construction of the tank is the absence of a bottom curb angle, the sides of the tank being welded to the bottom by continuous fillet welds inside and outside of the tank. This construction introduced an unlooked for difficulty. As the metal of these welds cooled, it contracted and pulled the tank bottom upwards, forming a V shape, the apex of the V being at the junction of the tank sides and the bottom. At a distance of 30 in. inwards from the tank sides, the bottom was raised about two in. off the foundation and from this point towards the center the bottom gradually came down on the foundation again.

To remedy this condition it was necessary to cut out a concentric ring about one in. wide from the tank bottom approximately 30 in. in from the sides. After several methods of forcing this bottom plate back to a 90° angle were used without success, it was decided to try peaning the inside weld with a large air hammer. This peaning of the weld did relieve the stresses and the plates took their normal position. A four-in. concentric strip was then welded over the cutout portion and both the bottom and sides were then in normal position.

In future welded holder construction peaning of all the heavy welds on the tank joints would be specified. This would tend to relieve stresses and insure freedom from small capillary leaks.

An interesting feature of the erection was that the tank and lift plates

came with a few holes punched along each edge. Bolts were used in these holes to hold the plates in place until tack welded. Later on these holes were filled by inserting small steel punchings and welding around them on both sides.

The hand railings are unique in that they are completely welded. The posts and top rails are made from standard angle iron. The intermediate rails are made from solid round iron bars put through holes punched in the post angles and spot welded in place.

All of the welding was done by the Fusion Arc Process using Fleetweld electrodes. The men who were employed by the contractor were all specially trained in welding, having to pass certain examinations before employment.

The gas company furnished the electric energy which was used in welding. Two hundred forty volt, three phase service was supplied to one 20-hp. air compressor and five 20-hp. arc welding machines, the latter having a maximum current rating of 400 amperes but being cut down for this job to a maximum of 250 amperes. All the energy that was consumed was metered and there was also a recording demand meter installed to check the demands made on the electric supply facilities. It was surprising to find that due to the diversity in use between the welding machines and air compressor, the highest 15 minute demand during the entire job was only 53 kilowatts. The total energy consumption was approximately 14,000 kw. hrs.

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Mid-West Gas Sales Council Elects New Officers

Election of officers for the Mid-west Industrial Gas Sales Council of the American Gas Association was one of the high points of the one day conference held in January at the Palmer House in Chicago. Arthur J. Huegel, Milwaukee Gas Light Co., will act as chairman during the coming year. Rodney G. Hayler, Central Indiana Gas Co., Muncie, Ind., was elected vice chairman, and P. F. Gibson, Western United Gas and Electric Co., Aurora, Ill., is the newly elected secretary and treasurer. About 65 mid-west gas men were present at the conference.

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Gas Co. Has New Offices In London, Ohio

Russell Caldwell, London, Ohio, manager for the Ohio Fuel Gas Co., recently announced the moving of company offices from the People's Bank building to the rooms adjacent to the Citizens Loan & Savings Co. building. The new offices have been completely remodeled and now house the business offices as well as the service department of the Ohio company.

Combining Art and Science In Modern Gas Displays

● **HARRY SWENSON, Peoples Gas Light & Coke Co., Chicago, Ill., in a paper, "Modern Gas Displays," presented before the Mid-West Gas Sales Conference, Chicago, Ill., February 10, 11, and 12, 1938.—(Abstract by G A S).**

TODAY display is something of an art, something of a science and inextricably linked with profitable merchandising. Merchandise to be sold must be shown and shown in such a manner that the value of it is enhanced, preferably a notch above that of our rival merchandisers.

HARRY SWENSON

Display like all advertising must have either news or entertainment value and not be merely a statement of cold facts. Reduced to a formula, good display is: facts colored by showmanship. All good showmen introduce a modicum of dignity to remove them from the classification of mountebanks. Likewise a good display-man observes a degree of decorum so as not to appear to be hawking his wares in questionable taste. Good display should have a distinctive character and preferably a character recognized as exclusively individual.

The value of any display is proportioned to the number of people observing it. There is keen competition for attention; there is hurry and distraction on all sides. It is, therefore, essential to show and tell something with speed and appeal to have it register effectively in the customer's memory lane.

Display should not only stimulate desire to own but it should make buying easy and pleasant. Many people in sales work don't seem to realize that a vast group of prospects do not want to be *sold—they want to buy*—and want only a minimum of sales assistance. To them eloquent display is far more important than the sales person.

Utility companies generally have not made themselves conspicuous by having good displays. The merchandising utility more than any other merchant has need of colorful, potent display and the agreeable atmosphere such displays create.

Display is advertising in three dimensions. It uses color liberally, it has both tangible and visual appeal. Through these distinct advantages it closely rivals newspaper advertising as a device for creating sales. Certainly newspaper advertising reaches a larger group, but display has the advantage of catching the prospect at the point of sale. Display then is a necessary adjunct to any and all other forms of advertising.

In technique it differs from its big sister, printed advertising, for it appeals less to reason than to the senses. It works with speed for what it is designed to do it must do quickly; it must burgeon interest before curiosity wilts. In a way display is the store's flirtation with the innocent passerby, though in this case the flirt actually means business. What the display implies or says pictorially is more important than any wording added to it. It should be in effect a synopsis of all the endearments one would heap on the merchandise in newspaper copy.

Display then, like all advertising, is basically an application of psychology. It is never done hit or miss but is as carefully studied and planned as any other presentation for public approval. The displayman today takes his job seriously, he knows the world's most valuable real estate is turned over to him. He uses less artiness and more sound psychology. He is less eager to surprise you with tricks, complicated motion and startling effects than to convey the feeling that you are missing something in life by not owning the piece of merchandise he shows you. He has learned that tricks don't kindle confidence in either the store or the merchandise, and that mysterious blah does but one thing and that is baffle people and baffling anyone is not the best way to convert him into a customer. He has learned too, that hocus-pocus, giddy effects and assorted tosh are no sure-fire buying incentives, that they may catch attention but do not hold it. Instead he uses color and line and copy in an almost scientific manner. Whatever he does is based on study and understanding of human reactions.

Passion of possession certainly rules

the average mind, half the things bought have no relation to either need or reason, or for that matter, common sense. Most often an article is bought for the simple and most human of reasons, some one wanted it! That's just it, the display should be a forceful reminder of something one wants, needs or ought to have. Often the merchandise is only a means to an end and incidental to the display; the display itself will remind you that you want comfort, beauty, diversion, relaxation or plain bolstering of your ego. Everyone likes to own things and especially things that please the eye or make him seem more adequate.

Beauty, a Sales Stimulus

Beauty, sheer beauty as sales stimulus, has immense potentialities. Beauty makes value; beauty of presentation increases value, and with beauty goes pride of possession. Skillful presentation of merchandise is now fully as important as skillful styling. No sales manager would think of placing a beautiful gas range in the window unsupported by a good display any more than he would think of presenting his wife with a wrist watch in a brown paper bag.

Intimately associated with beauty or rather a form of it, is color. Actually we define objects by their color and our memory for color is far more highly developed than our memory for line and form. No one ever says, "Who was that girl with a square-cut neckline I saw you with," no, you say point blank, and more picturesquely, "Who was that girl in the red dress?" Color makes a more definite and lasting impression and is, therefore, a most important factor in good display. That women have a keener color sense than men is no secret. If you don't believe it, separate the ties your wife bought you from those you bought yourself and you have a very convincing, though disheartening proof. I am more than certain that the logical display approach to women is via the route of color and beauty.

The tale of mechanical perfection has been told with justifiable pride over and over again. It is a stupendous story, but only mildly interesting to most women. It never was nor ever will be the primary approach in selling women. Few will marvel very long at the mechanical perfection of the gas appliance; its accomplishments will be taken for granted the second day it is in the house. But, there is no limit to the marvel of beauty, especially if we meet it where not expected. When the table-top range was introduced, for every woman who said, "It cooks better," 10 said, "It looks better."

It has been said that our merchandise is difficult to display and cumbersome to talk about. It is difficult to share this opinion. True, it is inarticulate and cannot fence for itself like a radio or a bathing suit, and is, therefore, more in need of intelligent display presentation. There are, it seems to me, two fundamental appeals in talking kitchen appliances: the first, beauty of the appliance; the second, beautiful foods. Both are excellent themes for display, and all else is secondary.

Time was when the industry proudly displayed and advertised the battleship construction of the range; built and talked the range as an heirloom and did the job so well that these indestructible objects are still in use. Then it dawned on the industry that it could talk of beauty and did it naively by placing a gorgeous slinky gal in all her evening finery oozing up to the range. This was supposed to mean something, though any woman bright enough to use the range could see it was plain silly. Today display is done differently, but still there is not enough said of beauty and not near enough of good cooking.

Now display is not to be taken in the narrow sense of merely window display. It should be thought of as an activity of wider scope and far-reaching effects. Window displays should be supported by store interior displays designed for point-of-sale duty. The general sales office, the very mien of the store and the company quarters, all are aspects of display. Display in all its forms is really the face you turn to the public and if the display job is done well, it is a clean, cheerful, smiling face you show your customers.

An experiment in display which has proven its value from every angle is that of environmental floor displays of model kitchens and basements. Every gas company now showing model rooms will endorse them enthusiastically as effective sales agencies and advertising features. The Peoples Gas Light and Coke Co. has elected to treat the gas appliances not as specialty objects, but as real home furnishings and component parts of the rooms. The kitchen today enjoys the same style importance as other parts of the home, and this point has been forcefully portrayed in these actual rooms which are a never ending source of interest to the customers and a god-send to salesrooms poor in interesting features.

The beauty of finely prepared foods and the modern gas range combine to give this Peoples Gas Light and Coke Company display attention-arresting appeal.

Demonstration Home

An adventure in display of more ambitious dimensions is that of demonstration homes. Life size, real, livable homes designed for gracious living with no fake, foolishness or folderols. The Peoples Gas Light and Coke Co. recently opened three such homes in different parts of the city. As they stand, they are monu-

ments to what the Gas Industry has done to further happy living. Built with a respectful eye on the best in bygone traditions but with a feeling for that which is fresh and modern, they are models of the contemporary luxury available with gas service. Those who look for startling ideas in materials or design will be disappointed. They are not mere showcases for merchandise. The gas appliances take their places with other furnishings without too great an emphasis and still it is evident that the kitchens and basements are the most popular parts of the house. The kitchens are what they ought to be, not only functional but livable and the basements are rooms of comfort, charm and relaxation.

Display by means of demonstration homes is in effect a reversal of the usual process of selling, for here the prospective customer sells himself on the service of gas appliances. If you can show your merchandise, doing all four jobs in ideal surroundings to 3,000 people on a Sunday afternoon, you've done something of true sales value.

Expenditures Required

To undertake any display program of success requires more than an appreciation of its value, more than the ability to carry it out—it requires an expenditure of funds, an expenditure apportioned as you apportion any other advertising budget. Until recently the average utility company's display budget has been equal to the purchase of a bag of peanuts and the result commensurate. The scope of display and its technique has changed very much in the last decade and it is impossible to tell a modern story by methods that were timely when the Cherry Sisters were in vogue.

If we are to merchandise as other stores we shall have to advertise and use display as other stores and to that end a reasonable display budget is a contributing factor.

■ ■

Havre Lets Contract for Gas Distribution System

The city council of Havre, Mont., has awarded the contract for construction of the 10-mile distribution system to J. L. McLaughlin of Great Falls, Mont. Mr. McLaughlin's bid was $144,651.12. The council has also entered into an agreement with the contractor for the 14 miles of pipe line to connect the Bowes field, south of Chinook, with the city system if gas is secured on land now under lease in the Bowes field. A $50,000 bond was furnished by McLaughlin for performance of the agreement.

The Havre system is to be financed with PWA funds, consisting of a loan of $90,000 and a grant of $73,000.

A Long Range Viewpoint of Industry Sales Problems

● **WALTER C. BECKJORD, vice president and general manager, Columbia Gas and Electric Corp., New York, N. Y. in a paper, "A Long Range Viewpoint of the Gas Industry's Sales Problem," presented before the Mid-West Regional Gas Sales Conference, Chicago, Ill., February 10, 11, and 12, 1938.—(Abstract by G A S).**

EVENTS are occurring so rapidly no one can predict very far in advance how a given situation may work out. It is quite evident, however, that people are demanding more comforts, better means of living, better means of transportation and better methods of application of heat and comfort.

W. C. BECKJORD

The gas industry has been plodding patiently along in the hopes that better times were coming and it would come into its own, and when the good old order of things is restored, its position would be assured. The good old order of things is gone forever and no wishful thinking can bring it back. Public opinion is a great force, sometimes wrong but in the end getting what it wants in one form or another.

It is up to a given industry that hopes to survive and make progress to study the modern trend of things and question itself accordingly. No one can hope to pull the answers to these problems out of the hat. It means careful, painstaking effort to find out what the public wants and what the trend of things and developments are, and then the planning of action on the basis of what is learned.

This nation as a whole must look carefully over its own preserves and develop domestic markets accordingly. We must live largely on the basis of production and distribution among our own people. This of course will not occur over night, but will over a period of time, and it behooves the gas industry to study the situation from that angle and to curtail capital expenditures and spend more money in the mad scramble for getting new business and holding it. If we do not do this, competitors will increase their efforts and acquire more of our existing business.

If we get into a cycle where the cost of living becomes an increasingly important factor to every family, it is undoubtedly true we will benefit by the economy resulting from the use of gas in the home. The gas industry must take a broader viewpoint of the whole situation and not try to analyze it from the standpoint of its own troubles. Other industries, not nearly so large nor with so much money invested, are studying the broad cycle of business and the gas industry must also take this stand.

The national advertising campaign has been under way for two or three years now and is making progress, but the critical period is coming in the near future when it will be necessary to spend more money. The electric industry has spent in excess of $15,000,000 a year for advertising. The average gas company spends less than one percent of gross earnings. The industry has a great deal of invested capital at stake and must advertise to increase domestic sales, which are so fundamentally the backlog of its business.

Let every one give thought to this broader aspect of the problem and do some serious thinking as to the way the gas industry can best meet it. A great deal of work has been done in developing a super gas range, which will undoubtedly bring results commensurate with the effort made. A successful campaign to finance the gas building in the World's Fair to be held in New York in 1939 has just been completed. At least half a million will be spent on the building and exhibits. In addition, a model home showing every conceivable adaptation of gas in the home will be exhibited. The whole industry is behind this project.

Effects of Habit Changes

Change in the habits of living as evidenced by careful analysis reveals that people are cooking less at home, that they are buying more canned goods; that concentration of people in flats, and apartments mean less cooking, etc. These changes all mean a loss to the gas business that will never be regained. In order to offset these losses, new markets must be found

and to that end we have begun a study of air conditioning.

Gas is the ideal fuel for dehumidification and proper humidification. A great deal of technical development has been accomplished but it has not been properly sold to the architects, contractors and home builders. Although refrigeration has now an assured place in the customers' homes, practical air conditioning is as yet a rather unknown factor. The utilities must give a great deal of study to this before they can intelligently offer it to their customers. It has a tremendous field in the future, but it is going to take a long time to work it out. Its application in the home is by no means perfected, and the initial cost is a real factor.

Educating the Architect

The Home Building campaign sponsored by the American Gas Association is under way. It means a broad scale education of architects and builders which must redound to the benefit of the gas industry. This is work that should have been done long ago.

Some trend figures over the past several years on gas sales in both the manufactured and the natural gas industries have been developed. There is a slight upward trend in 1937 for natural gas including house heating as compared with 1936, the percentage based on 1929 being 91.6c, or an increase of 1.6c, but for manufactured gas the trend is still downward being 93.1c of the 1929 sales as compared to 95.8c in 1936.

There has been a great deal of discussion on the causes of the decline. The time for further talk is gone. If action is not forthcoming the trend is going to be still further downward.

Half of the appliances in use today are over seven years of age and one-third are over 10 years, so there should be a replacement market of about two million ranges a year. The gross earnings in the natural gas industry have dropped from $40.36 in 1929 to $37.98 in 1937 and in the manufactured gas industry from $34.06 in 1929 to $27.63 in 1937. It is time something was done about it. The drop in domestic load is reflected somewhat in the sale of gas and electric ranges. In the eight-year period 1929-1936, 8,730,000 ranges were sold in the gas industry as compared with 1,213,000 electric ranges. But, while the ratio for 1929 was 10 to 1 in favor of gas ranges, the margin in 1936 was 5 to 1. And, during 1937, an estimated total of 1,600,000 gas ranges was sold, as compared to 405,000 electric.

It is not too late for the gas industry to speed up its sales efforts. Many companies have done an outstanding job. More modern selling methods are being developed every day. One company is offering certain credit for each dollar of monthly gas bill to help pay for appliances over the total credit period. Variation of this might well be used, because a credit on the use of gas through a given appliance would increase the volume of sales per customer and would give the customer greater incentive. It would help pay for the equipment, and in many cases the customer's immediate investment in equipment is probably greater than the out-of-pocket expenditure to serve him.

Many are undoubtedly looking at the profit from the sale of appliances as being too important a factor, and it must be urged that those connected with the sales end of the industry give careful consideration to the particular value of increased gas load which is a recurring factor. The dealer problem enters into this, and if we are to secure the wide-spread dealer co-operation obtained in the electric industry, more thought must be given to ways and means of encouraging them to sell gas appliances.

The modern home campaign will undoubtedly accomplish a great deal of good in acquainting the architects, builders and engineers, with what the gas industry has to offer. The advertising of our competitors has been so overwhelming, and the publicity the electric industry has developed, has made every one so electrically-minded that many people have forgotten the gas industry is still in the picture.

Must Intensify Sales Effort

Our very size has perhaps mitigated against the intensive sales effort that is necessary to keep any industry alive. We have come to feel we must continue to grow whether we try or not, and we do not seem to realize that competition after all is a serious factor in our business. The decrease in domestic sales is almost entirely due to competition and somewhat changed habits of living, but we must learn the lesson that people do not throw their money away for necessities. They may throw it away on luxuries, but when it comes to necessities they count every penny.

For some time the development of a small power unit for gas has been discontinued, and while some progress has been made, there is no great aggregation of capital behind it, and therefore progress is necessarily slow. We need more merchandising sense, a better realization of the values, and a proper consideration of the customer's viewpoint. It is his dollar we are trying to get hold of, and it is going to be more difficult from now on to do it.

As an industry we have spent too much capital money and not enough promotional money. We have not curtailed sufficiently spending capital money for a shrinking domestic market. Let us recognize this and question ourselves accordingly. There is this fact about capital money that should be of interest to the executives —it takes 15 to 20 years to amortize capital money, and it often takes a long time to find out if it were a profitable investment. Promotional money is amortized in one year, and whether the promotion is 100 per cent effective or not, certainly some good must be obtained by it and some business added to the lines.

Changeover Benefits

A study of the changeover to natural gas or mixed natural gas indicates a resultant growth in volumes and dollars even though at lower unit rates. One large company which changed over recently, sold 50 per cent more therms in the first full year of natural gas operation. This involves a big increase in house heating business and much lower unit cost, and practically twice as much sales in the industrial. This of course reduced the average rate earned but it still showed substantial increase in net earnings. This shows it is possible to meet competition, and the old idea that we could still earn a return on investment made year after year without the necessity of meeting the competitive situation, is gone with the wind.

I believe there is a new tempo in action right now, a keener realization of what we are up against and a greater desire to conquer our troubles and get somewhere. It is a challenge—a challenge to a sleeping giant with great possibilities. He is waking up now and when he gets going the other fellows are going to have to scramble for the business. I have confidence enough in the basic economics of our business and in the men who are coming to the front and developing sales programs, to feel we will make progress if we act, and that would be my closing advice—do something and do it now.

● **G. W. JONES, W. E. MILLER, JOHN CAMPBELL, and W. P. YANT, in a study, "The Effect of the Size of the Manhole on Natural Ventilation," Report of Investigations 3343, Bureau of Mines, May, 1937.—(Abstract by G A S).**

The Effect of Manhole Size On Natural Ventilation

IN A previous report,* results were given that showed the amount of natural ventilation in a manhole having a capacity of 74.1 cu. ft. when the number of ventilation openings in the cover was varied from no openings to a maximum of 48.

The results showed that the ventilation (air changes per day) in the manhole was proportional to the area of the openings in the cover, and also that the number or area of the openings was the factor that chiefly affected the ventilation.

The manholes used by most utilities are larger in capacity than the one in which the above tests were made. To determine the effect of the size of the manhole on the natural ventilation when such ventilation is obtained by installing ventilation openings in the cover, two larger manholes were constructed, and ventilation tests were carried out in them. The dimensions and capacities are given in Table No. 1. (See page 38).

Not only did the capacity of the three manholes vary, but their shape and design were different, also. Manholes A and C simulated rectangular shafts and were considerably greater in depth than their cross-sectional dimensions, while manhole B, though not so deep as the others, was greater in cross-section. The latter was also eight-sided.

Before each test was begun, the cover was removed and the manhole purged with fresh air for several hours by means of a mechanical blower. The cover was replaced, and all ventilation openings except the number chosen for test were closed with rubber stoppers. The flow of test gas into the manhole was started and adjusted to the desired rate, as indicated by a calibrated flowmeter. The actual quantities of gas were measured by a calibrated wet meter. Usually the tests were begun in the evening and allowed to run all night, so that the desired rate could be checked accurately and the maximum concentration of gas in the manhole reached during the night. The time required to reach this maximum concentration varied with the amount of ventilation and usually required one to eight hours.

Samples of the atmosphere were taken at the top, middle, and bottom of the manhole at four- to eight-hour intervals, depending on the duration of the test. When tests lasted more than two days, the atmosphere was sampled three times a day. Coincident with the taking of the samples, measurements and records were made of the temperature, both inside the manhole and two and a half feet above the manhole cover, the gas rate per hour, barometric pressure, average wind velocity, relative humidity, weather conditions, and rainfall.

The results of the tests in the small manhole, A, which had a capacity of 74.1 cu. ft., have been given in a previous report, and the test data need not be repeated. The summarized results obtained in this manhole, which show the relation between the area of ventilation openings, in square inches per 100 cu. ft. of manhole space, versus the number of air changes per day, are shown graphically in Fig. 1 along with the results obtained in manholes B and C.

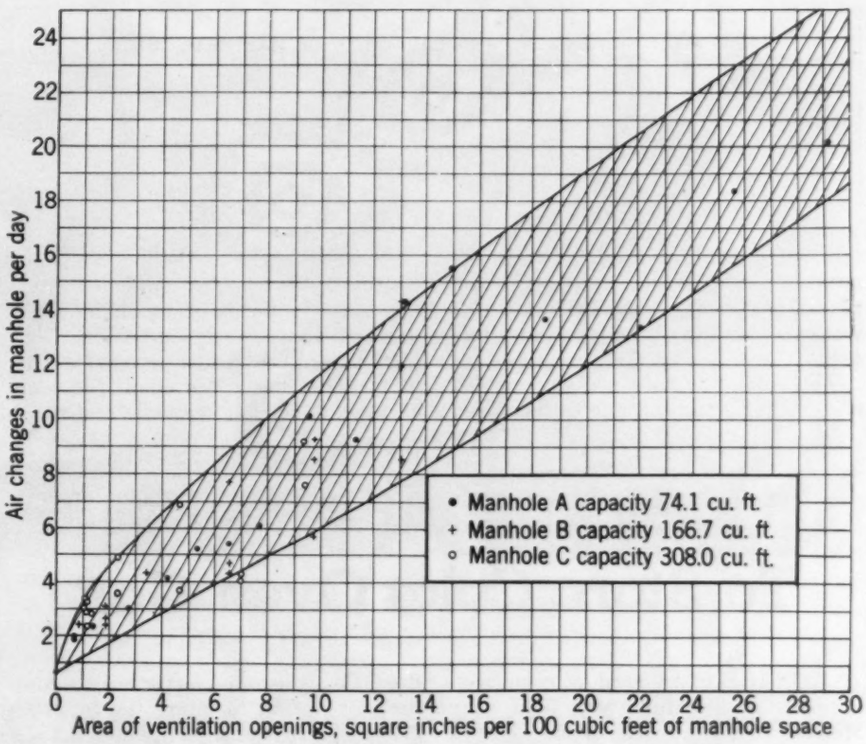

Air changes in manhole per day
Area of ventilation openings, square inches per 100 cubic feet of manhole space
• Manhole A capacity 74.1 cu. ft.
+ Manhole B capacity 166.7 cu. ft.
○ Manhole C capacity 308.0 cu. ft.

FIG. 1. Ventilation produced in manholes by changing the area of ventilation openings.

Tests that were made in the different manholes have shown that the wind velocity or speed at which air passes over the manhole cover has a marked effect on the ventilation rate. Also, the time of year must be considered, because when the manhole temperatures are much higher than the outside air temperature, other conditions being constant, the ventilation rates increase.

The results obtained in the three manholes warrant the general conclusion that as the area of openings in manhole covers is increased, the ventilation also is increased, and they show that a manhole of any given size will be better ventilated and therefore the elimination of any combustibles that may collect in the manhole will be aided by increasing the number of ventilation openings in the cover.

The somewhat erratic points shown in Fig. 1 are due largely to other factors, such as varying wind velocity,

* G. W. Jones, W. E. Miller, John Campbell, and W. P. Yant, in a paper, "Effect of Holes in the Covers on Natural Ventilation"; Report of Investigations 3307, Bureau of Mines, June, 1936. Abstract in G A S, November, 1936, page 24.

TABLE NO. 1. DIMENSIONS AND CAPACITIES OF MANHOLES TESTED.

Manhole	A	B	C
Capacity ..... cu. ft.	74.1	166.7	308.0
Horizontal dimensions..... inches	36 by 36	83.5 by 60	74.5 by 68.5
Vertical height from the bottom of manhole to cover. inches	96	76	111

temperature differences between the outside air and the manhole atmosphere, and weather conditions, which were never the same for any two tests.

The results do not show any decided change in ventilation due to increased capacity or shape of the manhole. The results for the larger manholes, when expressed in terms of air changes per day versus area of ventilation openings in square inches per 100 cu. ft. of manhole space, are about the same as for the smaller manhole tested.

Pennsylvania Fields Used To Store Coke Oven Gas

STORAGE of by-product coke oven gas in a natural gas field near McKeesport, Pa., has been successfully carried on by Carnegie Natural Gas Co., Pittsburgh, since August 2, 1930. It is said to be the only instance in the world of a natural gas field being used for such storage purposes.

As long ago as 1927 engineers of Carnegie Steel Co. became concerned about the disposal of surplus by-product gas over week-end periods. To avoid a weekly loss estimated at 50 to 60 million cu. ft. of gas, they considered the erection of gas storage tanks.

Low Cost Storage

It was at this time that S. W. Meals, president of the Carnegie Natural Gas Co., suggested the use of the McKeesport natural gas field for storage. He pointed out that one 15,000,000 cu. ft. holder would cost at least one million dollars and that the wells in the McKeesport field, and royalty interests as well, could be purchased for much less. The gas holders, moreover, would have definitely limited capacities, whereas the storage capacity of the McKeesport reservoir would be far beyond estimated needs of the steel company.

After buying the gas wells, and buying or leasing the gas and gas rights, Carnegie Natural Gas Co. constructed a 20-in. pipe line from the reservoir to the Clairton, Pa., by-product coke works of the Carnegie Steel Co., where the latter built a compressor station to pump the by-product gas into the line.

Natural gas was sold from the field to Peoples Natural Gas Co. until June 1, 1930. Gas was being pumped from the wells under vacuum when production was stopped. The wells were then sealed in until August 2, 1930, when the first by-product gas was pumped from the Clairton booster station.

Between the time production stopped and the first by-product coke gas was fed into the line, the natural gas pressure in the wells had built up to 9 lbs. per sq. in. When the by-product gas was introduced into the field, it was found that the pressure was raised one pound for every 10 million cu. ft. pumped in.

The largest quantity of gas stored in the field at any one time has been about 600,000,000 cu. ft. Total pressure is ordinarily kept below 65 lbs. because of the risk of blowing out old wells that may not have been properly plugged.

Originally, 25 wells were used to pump the by-product gas into the field, but operating efficiency has been improved by reducing the number to seven.

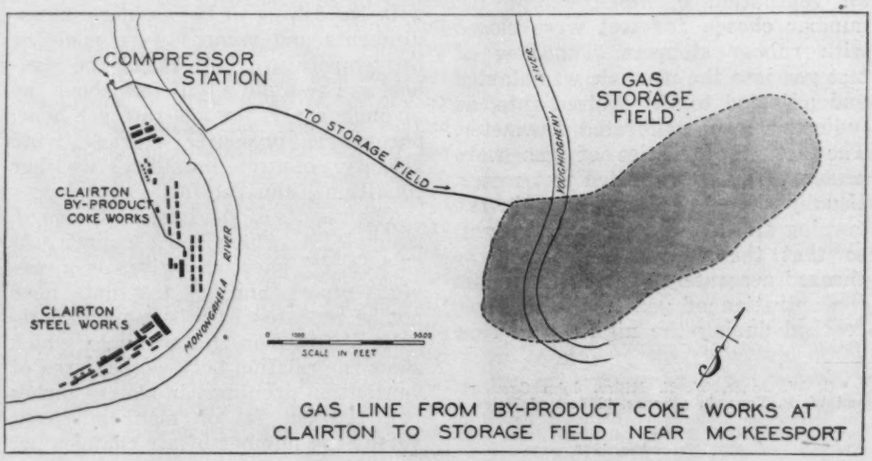
The secret of successful storage of by-product gas in natural gas sands, according to Mr. Meals, is to keep it clean—free from dust, tar, and sulphur. Dust and tar, he points out, would seal the sand pores in the gas field, while sulphur in the gas would be likely to attack the steel in the pipe lines and tubing, and, in time, might have a tendency to clog the pore spaces in the sand.

During the depression, when gas consumption dropped sharply with the lag in steel plant operations, by-product gas was pumped in far exceeding in quantity the surplus week-end gas for which the field was originally bought.

Gas Enriched

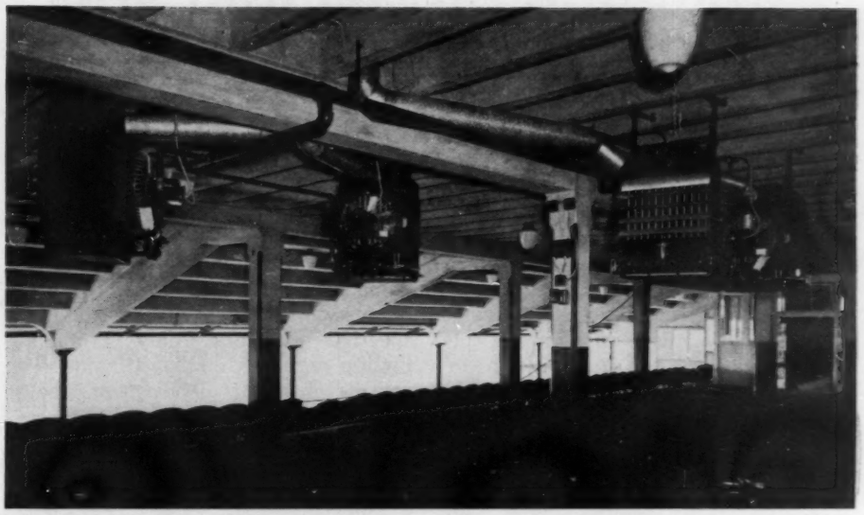
One of the greatest advantages of the storage field, the company has found, and one not fully appreciated at the start, is that it enriches and adds to the gas that it holds. In other words, more gas is withdrawn from the field than is pumped in. The company explains that the pressure of the incoming by-product gas opens up new pockets of natural gas, and that the natural gas comes up with the by-product gas when gas is taken out of the reservoir.

The excess gas withdrawn from the field between the beginning of operations in August, 1930, and July, 1937, totaled 357,534,600 cu. ft. In that period 3,584,798,700 cu. ft. of gas was pumped in and 3,942,324,300 cu. ft. was withdrawn from the underground reservoir.



GAS LINE FROM BY-PRODUCT COKE WORKS AT CLAIRTON TO STORAGE FIELD NEAR MC KEESPORT

* Prepared from "By-Product Gas Stored in Natural Gas Wells," U. S. Steel News, November, 1937 (Carnegie Natural Gas Co. Number.)



Unit heaters, suspended from the ceiling at Sportsman's Park, Chicago, are used to insure warmth for race fans during the October season.

Chicago Turf Fans Warmed By Gas-fired Unit Heaters

By ED TAYLOR
Public Service Company
of Northern Illinois

FREQUENTERS of the race track this season in Sportsman's Park, Chicago's one-half miler, located at Cicero, Ill., were unaware of October's chilly blasts. By means of batteries of gas-fired unit heaters, strategically located throughout the Club House, turf fans, peering at the "ponies" from behind plate glass windows, enjoyed the equivalent of June weather at this unusual race course.

The racing season at Sportsman's Park extends from October 4 to October 30. The lateness of the season and the vagaries of Chicago's weather, which may vary from sub-zero to midsummer temperatures, brought a serious problem to the National Jockey Club, operators of Sportsman's Park. Since cold weather would mean a decided falling off in attendance, and Chicago Weather Bureau records for the past 50 years indicated that October would tend toward the chilly side, the management called in heating engineers of the Public Service Co. of Northern Illinois and presented the problem. The result was the installation of gas-heating equipment of unique application.

One of the main factors to be considered in heating the club house was the cement structure, which is always a particularly difficult subject to heat. The chief reason for this is that the coefficient of heat transfer is high—cement is not considered a very good insulator of heat. Another difficulty was that the club house involved large areas with correspondingly large volumes of air to heat. In addition to this, the entire front of the third deck was composed of plate glass and steel. On the other hand, however, it was not necessary to provide for heating other than to handle the normal fluctuations which occur in October.

Looking at the one-half-mile track through the plate glass-enclosed and gas-heated grandstand.

On the two decks which are being heated—these heaters were hung in batteries of four — each heater so placed as to throw heat over an arc of 90 degrees. The distance from each heater to the most distant point was measured and the proper velocities specified. On the top deck where the entire southern exposure consisted of an almost solid glass wall, the velocities of the heaters, covering this area, were of sufficient intensity in order that the heated air would literally "pour" on the glass thus keeping it from fogging on chilly days.

The equipment for heating deck No. 3, the top deck, consisted of four Surface Combustion Unit Heaters. Two of these were of the 200,000 B.t.u. input type operating at 1140 r.p.m. The remaining two heaters had an input of 125,000 B.t.u. each and operated at 860 r.p.m. Products of combustion from these heaters were vented through the roof through two stainless steel stacks. For controlling temperatures, a Minneapolis thermostat operating through a relay, was installed in a central position.

On deck No. 1, the heating installation was of a similar nature with the exception that four 100 B.t.u. heaters were installed—two of 860 r.p.m. and two of 1140 r.p.m. velocities. The heat loss from this area was considerably less and the units were correspondingly lower in heat output. Like the heaters on the third deck, a Minneapolis thermostat, operating through a relay, controlled temperatures. The problem of disposing of the products of combustion was solved by installing a twelve inch Transite flue extending from the floor of deck 1 through the entire structure to the roof.

In actual practice the heating installation proved advantageous. Weather conditions during this period, except for a few warm days, were cooler than average for the month. A total of 422 degree days or approximately 7 per cent of the season's coldness took place during this period. This meant that the heating equipment was called on for longer periods of operation than originally intended. However, at no time did the temperatures on the heated decks drop below 67 degrees. In most instances, it was only necessary to operate the heating equipment for about two hours prior to admittance of the public.

Nation Wide Refrigeration Campaign Gets Under Way

THE nation-wide gas refrigeration selling campaign, sponsored by the American Gas Association Refrigeration Committee, with H. R. Sterrett, president of the New Haven Gas Light Co., as chairman, in collaboration with the Association of Gas Appliance and Equipment Manufacturers and Servel, Inc., was officially opened on March 1 with the start of the "warm-up" program, or "Stem-Winder drive," for the big campaign. Campaign activities will continue through the spring to close in July with the "Golden Chimes drive." This is the sixth consecutive year in which the committee has conducted a national drive.

"Make Every Minute Count," the theme of the 1938 campaign, will be symbolized by the Grandfather clocks which will be presented to the 17 gas companies standing highest in refrigerator sales at the close of the selling contest. Other awards to be offered winning companies include hall clocks, mantel and desk clocks, and pocket watches to be won by sales employees making the highest records. More than 2000 cash awards will also be presented.

The "Stem-Winder drive" will continue only through March, awards to be presented to salesmen only. During April, May, and June the "Main-Spring drive" will be carried on, with the final drive taking place in July.

As in previous contests, the Refrigeration committee has planned the present campaign with a view to rewarding individual sales people on whose efforts so much of the success of the contest depends. Emphasis having been placed on the important part sales people, in collaboration with company sales management, will take in the campaign, a number of valuable cash awards will go to the men or women who make the highest records in gas refrigerator sales.

Companies entering the contest are divided into eight groups, based on the size of the companies and expressed in terms of the number of meters on their lines and the rate per therm. A special division (No. 9) has been added in this year's contest in which the salesmen of dealer organizations of bottled gas members of the American Gas Association will compete for cash awards. Under the rules, no company in any division can win more than one clock.

Cash awards will also go to the home service departments of companies winning first place in their respective divisions, only companies having regularly employed home service directors or departments being eligible.

Campaign plans were prepared by the A.G.A.E.M., under the direction of F. E. Sellman, vice-president of Servel, Inc., and treasurer of the A.G.A.E.M. The Refrigeration committee unanimously adopted the plans, which were presented by Adolph Jansen, Jr., assistant promotion manager of Servel, Inc., at the first meeting of the year, January 21.

Members of the 1938 Refrigeration committee other than Chairman Sterrett are: R. O. Berry, Jacksonville Gas Co.; B. O. Brown, Servel, Inc.; N. O. Fratt, Seattle Gas Co.; A. C. Frey, Worcester Gas Light Co.; G. T. Henry, Roanoke Gas Light Co.; H. M. Henry, Utility Management Corp.; W. A. Hudson, Houston Gas & Fuel Division of United Gas Corp.; W. L. Hutcheson, Manufacturers Light & Heat Co.; A. Jansen, Jr., sales promotion counsellor; R. A. Lawder, Consolidated Edison Company of New York; E. G. Peabody, Citizens Gas & Coke Utility, Indianapolis, Ind.; J. A. Sackett, Kings County Lighting Co.; F. C. Neuls, Industrial Division, American Gas Association, and F. E. Sellman, Association of Gas Appliance and Equipment Manufacturers.

P. C. G. A. Sales Conference Scheduled This Month

C. R. GRAHAM

N. O. FRATT

PACIFIC COAST gas men will congregate in Los Angeles on March 24 and 25 to attend the Pacific Coast Gas Association, Spring Sales Conference, which is being jointly sponsored by the Sales and Advertising Section and the Manufacturers' Section under their respective general chairmen, N. O. Fratt of the Seattle Gas Co., and C. R. Graham of the James Graham Manufacturing Co. Clifford Johnstone is managing director of the Association.

All meetings will be held in the Southern California Gas Co.'s building, and the round-table spirit and informal discussions will prevail at all sessions.

Three one-half day meetings will be held by the Domestic Sales committee under the leadership of H. W. Edmund of Coast Counties Gas and Electric Co. The first of these will deal with the training of utility and dealer salesmen; the second, with domestic cooking, water heating and refrigeration appliances and methods of increasing their sale; and the third, with domestic heating and air conditioning.

The Commercial and Industrial Sales committee under the leadership of E. H. Adler of the San Diego Consolidated Gas and Electric Co. will hold two meetings. These will deal with commercial cooking and draft and other control equipment. On Thursday afternoon, the industrial sales delegates will attend the Western Metal Congress, as a program of special interest to industrial gas men has been prepared for that time.

No meetings are scheduled for Friday afternoon, and it is expected that many of the domestic sales delegates will join with the industrial men in a visit to the Western Metal Congress, where an exhibit of gas-fired industrial metal working and factory building heating equipment has been established through the joint efforts of the American Gas Association, the Pacific Coast Gas Association, and the Natural Gas Bureau.

Group luncheons will be held Wednesday and Thursday at the Southern California Gas Co.

1937 Market Increase Shown In Gas Industry Statistics

REPORTS released by the American Gas Association show that revenue for the entire gas industry, both manufactured and natural, aggregated in excess of $801,931,000 in 1937, a gain of 4.1 per cent over 1936. Natural gas companies grossed $441,176,000, a gain of 6.9 per cent for the year, while manufactured gas revenues were $360,755,000, an increase of 0.9 per cent over 1936.

Preliminary estimates indicate that the total production of natural gas in 1937, including amounts used in the manufacture of carbon black and for field purposes, reached an all-time high of more than two and one-half trillion cu. ft. This production estimate is more than 17 per cent above the 1936 peak of 2,167,802,000,000 cu. ft. Approximately 170 billion cu. ft. of natural gas were used as fuel for generating electric power in 1937, an increase of nearly 9 per cent over the 1936 figures of 156,080,000,000 cu. ft. for that purpose.

Statistics show a favorable increase in equipment sales and in the potential market for domestic water heating. During 1936 alone 1,464,000 gas ranges were sold, but approximate estimates for 1937 indicate sales of nearly 1,600,000 ranges, a gain of 10 per cent, and a figure equal to the previous peak established in 1929. It is estimated that 735,000 gas central house heating installations were connected to gas company lines in the United States during the past year.

An important factor in the steady increase in production and sales which has been accomplished by the maintenance of a high standard of service to gas customers is the tremendous amount of capital that stands back of each worker in the gas industry. The average worker in this industry has behind him an investment of nearly $37,000, which is considerably greater than the $3000 backing each worker in the automobile industry or in the steel industry where the comparable figure is nearly $7000.

More than 135,000 people are employed by the manufactured and natural gas companies of this country at an annual payroll in excess of $213,000,000.

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Southern Union Transfers Van Johnson to Dallas

Van Johnson, former district manager of the Gas Company of New Mexico, Clovis, N. M., was recently transferred to the Dallas, Texas, offices of the Southern Union Gas Co. Mr. Johnson's new position will be that of district superintendent of measurements.

Gas Industry to Stimulate U. S. Housing Program

COINCIDENT with the signing of the liberalized National Housing Act, the gas industry announces a national program to stimulate the construction and modernization of homes throughout the country. This program to be inaugurated this month, has the endorsement and backing of gas utilities and appliance and equipment manufacturers from coast to coast.

MAJOR FORWARD

J. F. QUINLAN

It is expected that more than 1,500 gas companies which serve a population of 80,500,000 people with manufactured and natural gas through some 17,022,000 meters as well as hundreds of gas appliance and equipment manufacturers, will cooperate in this great program. Thus, one of America's major industries, with capital investment of over five billion dollars, will cooperate and tie-in with all housing activities, private or governmental, together with the manufacturers of building equipment and supplies in order to stimulate employment in the construction field and awaken nationwide interest in the building of new homes.

Under the direction of Major Alexander Forward, managing director of the American Gas Association, J. F. Quinlan, formerly manager of the nationally known "New American" Demonstration Home Building Program will direct this nationwide gas industry program and the new Home Appliance Planning Bureau at Association headquarters. The theme of the program "Use Gas for All 4" is being incorporated into all national advertising and local companies will be asked to support the program by local newspaper advertising and other local promotional activities.

At a meeting of gas industry executives last month final plans for the home building program were approved, it being recognized by the industry that a revival of building activity over the next several years will result in the construction and modernization of millions of homes and that these homes should be equipped with the latest and best in gas appliances for every purpose.

Included in the program will be a contest among the architects of the United States and Canada for the design of all-gas homes, a builders' competition for the construction of these homes, and the contemplated reproduction of several of the prize winning homes at the New York World's Fair. The sum of $23,700 has been appropriated as prize money for the architects' and builders' competitions.

The gas industry will not furnish house plans, but will refer all prospects to local architects and local builders. It will establish a service for architects and builders in all matters pertaining to gas appliance installations, and through demonstration homes, assist in interesting the general public in the use of gas appliances for new home construction and modernization.

The demonstration of modern, gas-equipped homes to millions of Americans will be accomplished by gas utilities, gas equipment and appliance manufacturers and manufacturers of building materials and supplies in cooperation with local architects and builders. Model homes will be constructed fully equipped with gas appliances so that the public may readily be brought up-to-date regarding the important developments which have been made toward greater comfort, livability, health, economy and convenience which such modern appliances provide.

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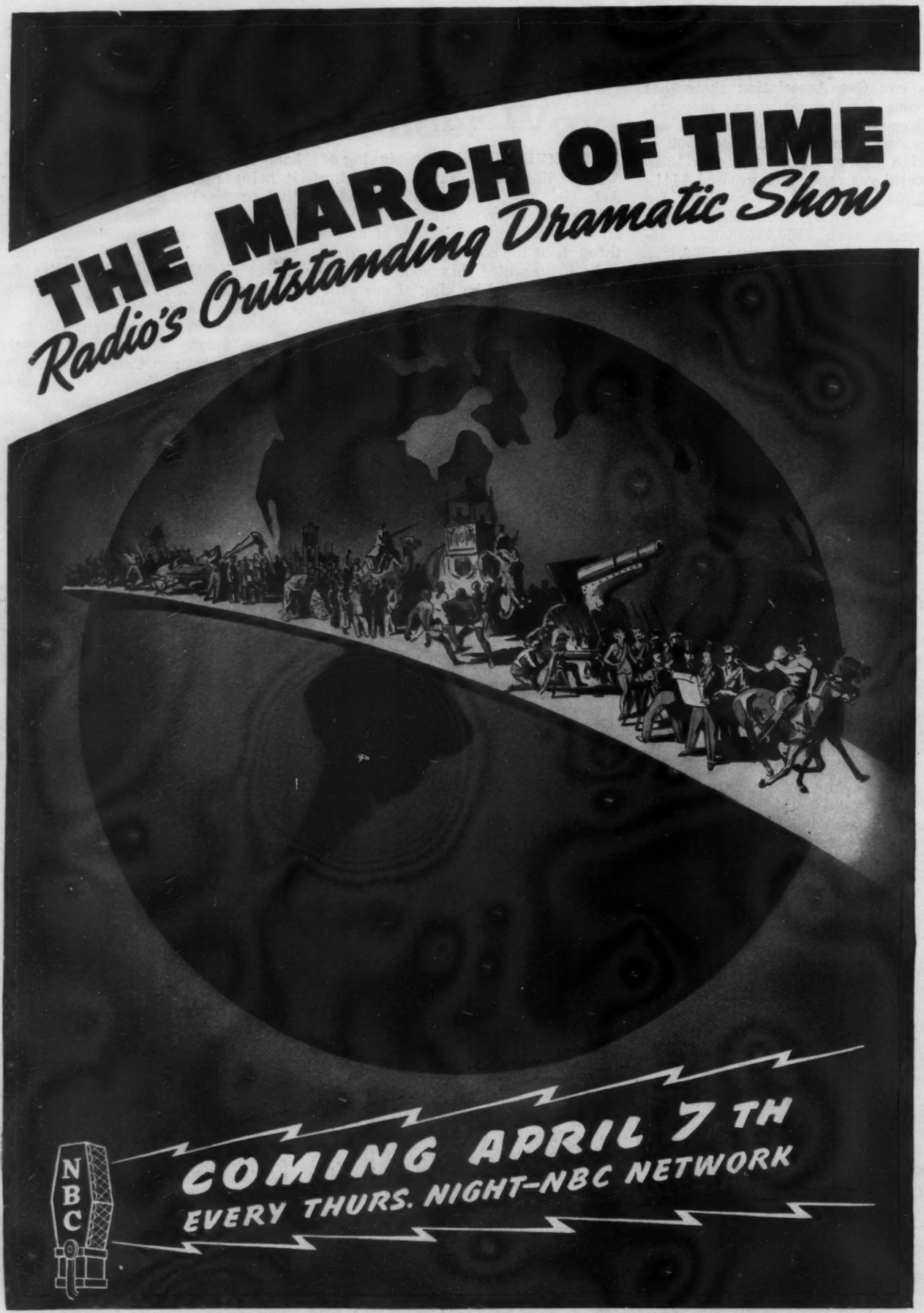
Permission to Build New Pipe Line Given Clareco Co.

J. M. Pierce and Paul S. Hughes, operators of the Clareco Gas Co., Mt. Pleasant, Mich., have been granted permission by the state public utilities commission of Michigan to construct a pipe line connecting their Murphy No. 1 well in Wise township, Isabella county, Mich., with the four-in. transmission line of the Gas Corp. of Michigan. The proposed pipeline, which will cost $2500, is expected to relieve a natural gas shortage in Mt. Pleasant. It will have a two-in. diameter and extend for three and a half miles.


THE MARCH OF TIME
Radio's Outstanding Dramatic Show
COMING APRIL 7TH
EVERY THURS. NIGHT—NBC NETWORK
NBC

GOES TO WORK AGAIN FOR SERVEL ELECTROLUX *and for you!*

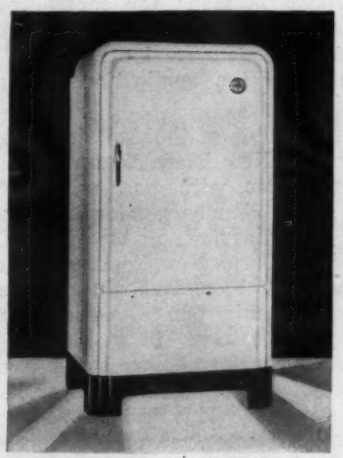
Beginning April 7th, this great program . . . sponsored by Servel . . . will be selling gas and gas service to your community, will be helping you build more sales in 1938

That Servel salesman's here again.

The March of Time—radio's lively, timely, prestige-building show—will be supporting you once more in 1938. Commencing Thursday, April 7th, 20,000,000 or more listeners from coast to coast will be tuned in every week to the Servel Electrolux story. Among them will be *your* prospects.

These prospects will hear about the different refrigerator. They will learn about the no-moving-parts freezing system. They will be intrigued by the benefits of permanent silence, continued low running cost, and savings that pay for it. They will be told to come in and see you. Above all, they will be impressed by the advantages of gas and gas service.

Servel is once more sponsoring this program, because of its great success in 1937. Reactions last year were splendid. Gas company officials and dealers alike were almost unanimous in their approval of featuring Servel Electrolux on the air by means of this strong, dramatic show.



LIVE REBROADCAST FOR WESTERN STATES

So on April 7th, at 8:00 P.M., Eastern Standard Time, over the basic NBC Network, The March of Time will go to work for you, creating prestige for you throughout your entire community.

And here's good news for Far Western States! This year, there will be a live rebroadcast of this show from the New York studios, so that listeners in the Rocky Mountain and Pacific Coast areas will hear it at 9:15 P.M.—*their time.*

Remember—The March of Time is a part of Servel's greatest advertising campaign, a campaign that is exerting more sales pressure upon your prospects than ever before. Don't miss this opportunity! Tie in with aggressive local poster and newspaper advertising. Utilize the backs of gas bills for gas refrigerator advertisements. Organize your sales staff at once for an intensive drive.

Servel, Inc., Servel Electrolux Sales Division, Evansville, Ind.

AND ANOTHER BIG RADIO ATTRACTION! *Servel Electrolux will also be featured, during May and June, on Procter and Gamble's Guiding Light Program. Watch for details.*

The Industrial and Commercial Air Conditioning committee, Industrial Gas Section, A.G.A. Seated left to right Leon Ourusoff, vice-chairman; Roy P. Wilson; Charles R. Bellamy, chairman; H. C. Haroldson. Standing: C. F. Cushing, Kendall B. Castle, F. M. Johnson, D. S. Reynolds, and J. C. Patterson, vice-chairman.

Air Conditioning Displays Feature Heating and Ventilating Exposition

NEW developments in gas air conditioning, heating, humidification, and dehydration for domestic, commercial and industrial purposes were featured in the numerous exhibits displayed at the Fifth International Heating & Ventilating Exposition held at the Grand Central Palace, New York City, January 24-28. Meetings of the American Society of Refrigerating Engineers and the National Warm Air Association were held in the Roosevelt Hotel, while those of the American Society of Heating and Ventilating Engineers took place in the Biltmore.

A definite tendency toward the adoption of forced warm air winter conditioning was much in evidence, according to a statement by Frank H. Trembly, vice-chairman of the Industrial Gas Section, American Gas Association, and chairman of the A.G.A. House Heating Air-conditioning committee, who visited the exhibits. Among prominent visitors was Charles R. Bellamy, chairman of the Industrial & Commercial Air-conditioning committee, Industrial Gas Section, A.G.A., who stated that industrial leaders are becoming increasingly aware of the superiority of the gas adsorption type of dehydration unit for summer air conditioning and process drying. Proof of this was reflected in the crowds jamming the booths of the leading manufacturers of this apparatus.

The trend toward year 'round air conditioning has resulted in units built for industrial, commercial and residential adaptation, which combine the six factors of up-to-date air conditioning, namely, heating, cooling, humidification, dehumidification, forced circulation and air filtering. Provision is made for control over these factors and to provide a maximum of economy and a minimum of trouble by the application of automatic devices.

The exhibit of the American Radiator Co., New York, featured a gas steam boiler, with glass windows in the steam chamber, going full blast. Its subsidiary, the American Gas Products Corp., New York, introduced its new direct-gas-fired winter air conditioning unit, pan evaporator type. Also shown was its standard sectional low pressure gas boiler usable with hot water, steam or vapor heating systems. This is equipped with a new thermotor valve in the gas line which is actuated from the room thermostat. Gas water heaters in new and pleasing jackets were in evidence.

The Mueller Furnace Co., Milwaukee, showed for the first time a gas house heating package unit for the volume trade and ranging in capacity from 65,000 to 100,000 B.t.u.'s It includes a warm air direct-fired gas unit, humidifier, fan and filter in one jacket. This concern also featured an "above the floor" warm air heating and winter air conditioning unit for apartments or houses without basements. Sectional, cast iron gas boilers and warm air furnaces completed the exhibit.

Automatic gas boilers of the sectional cast iron type for heating houses and commercial and industrial establishments were featured by Crane Co., Chicago. A new model of very small size for residences was presented for the first time. All these units are furnished with de luxe housings for finished basements.

Combination gas heaters and air conditioners were on display at the booth of the Fox Furnace Co., Elyria, Ohio, a division of the American Radiator & Standard Sanitary Corp., New York. These are direct-fired with humidification for winter and put up in cabinets of steel finished in two-tone glossy green enamel.

A new gas incinerator was presented by the Condensation Engineering Corp., Chicago. This was designed for commercial, institutional or residential service. It burns the garbage to such a fine powder that the ash tray has to be emptied only 4 times a year. This concern also displayed a line of vitreous enameled chimney linings for use with gas fired heating units.

■ ■

A.G.A.E.M. Plans Annual Convention For May

Manufacturers of gas appliances, equipment and accessories, from all parts of the United States and Canada will meet in White Sulphur Springs, W. Va., May 25 at the annual convention of the Association of Gas Appliance and Equipment Manufacturers, according to an announcement by Merrill N. Davis, president of the Association, and executive vice president of the S. R. Dresser Manufacturing Co., of Bradford, Pa.

The three day convention will be held at The Greenbrier where delegates will discuss technical, promotional, and other important national problems of the gas appliance industry.

■ ■

Gas Service Is Improved

The National Gas Co., Ada, Okla., has doubled the trunk line from gas wells into Stonewall, Okla., to secure steady gas pressure in that vicinity. The cost of the double service arrangement is reported to have been approximately $3000.

WEDGEWOOD . . . THE *Modern* GAS RANGE

MODEL 3245 CT—Closed Top
MODEL 3285 OT—Open Top

With many exclusive features every woman wants.

COOKS YOUR FOOD * HEATS YOUR ROOMS

BUILT-IN GAS CIRCULATING HEATER
Instant warmth at the turn of a valve. Automatic Lighter.

SPEED-PLUS-SIMMER BURNERS
For intense heat,—or slow gentle cooking. Automatic Lighter. Two Super Speed-Plus-Simmer Burners in front.

EXTRA LARGE COOKING SURFACE
Top burners are wider spaced, allowing ample room for largest pots and pans.

EXTRA DEEP, LOW TEMPERATURE OVEN
20 inches deep . . . big enough for the largest roasts. Extra-heavy insulation in oven top.

ROTOR-DISC ASTOGRIL BROILER
Sears and broils both sides at once . . . seals in all the juices. No rack to handle . . . no smoking or flaming fats.

DOUBLE LIFT-UP COVER
Oven cover lifts like the burner cover. Provides twice as much pot-and-pan working area.

AUTOMATIC CLOCK AND SIGNAL TIMER
For fully-automatic roasting and baking.

Gas THE MODERN FUEL

WEDGEWOOD THE MODERN GAS RANGE
MAKES FRIENDS FOR GAS

JAMES GRAHAM MANUFACTURING CO. • SAN FRANCISCO, LOS ANGELES, NEWARK, CALIF.; PORTLAND, ORE.

$23,700 in PRIZES for

Architects' Competition

for the design of homes

$13,700
IN PRIZES

Part I —HOUSE DESIGN COMPETITION

CLASS 1—PROBLEM: To design a house containing 18,000 to 24,000 cubic feet with plans for kitchen and basement or utility room.

CLASS 2—PROBLEM: To design a house containing 24,000 to 32,000 cubic feet with plans for kitchen and basement or utility room.

Part II—NEIGHBORHOOD PLANNING COMPETITION

PROBLEM: To plan a neighborhood for families of diverse occupations and having incomes ranging from $2,000 to $7,000 per year.

•

Every competitor must enter Part I. He may, if he elects, enter Part II, in which case he must also enter Part I.

Any competitor may submit as many entries as he wishes in either part of this competition. All entries in Part I—the House Design Competition—must include not only the house plans, but also plans for the kitchen and basement or utility room. The program for this Competition will be sent you upon receipt of the entry coupon on the opposite page.

ENTER NOW! *Mail the coupon!*

FOR FULL DETAILS OF THE BIG A. G. A. COMPETITIONS

GAS IS YOUR QUICK, CLEAN, ECONOMICAL SERVANT

2 COMPETITIONS

SPONSORED BY THE AMERICAN GAS ASSOCIATION

Builders' and Architects' Competition

for the building of houses

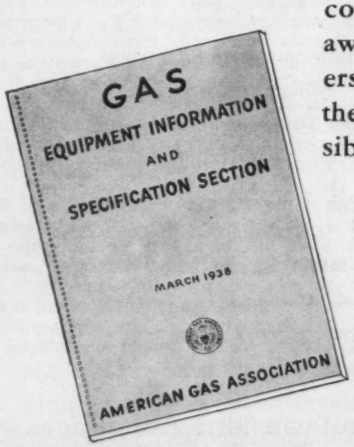
THIS competition is open to builders and their architects who shall, before *July 1, 1939*, complete the building of one or more houses utilizing "GAS FOR THE 4 BIG JOBS"—cooking, refrigeration, water-heating, and house-heating.

Prizes for the best houses selected in this competition will be awarded to the builders of the houses and to the architects responsible for their design.

$10,000
IN PRIZES

ARCHITECTS' COMPETITION CLOSES MIDNIGHT, MAY 23, 1938!

Mail entry coupon below for complete A.G.A. Competition Program.



Every contestant must have this free booklet

containing full information and specifications for both the House Design Competition and the House Building Competition.

COMPETITION DIRECTOR
AMERICAN GAS ASSOCIATION
420 Lexington Ave., New York City

Date_____

Last Name_____ First Name_____ State_____
(*Please print*)
Address_____ City_____

I wish to enter the A.G.A. Architectural Competition ☐
I wish to enter the A.G.A. Builders' Competition ☐

I am an Architect_____ Designer_____ Builder_____
Town Planner_____ Engineer_____ Draftsman_____

Kindly forward complete details on competition checked above.

_____
Signature

GAS

PLAN TO USE GAS FOR THE 4 BIG JOBS!

Committees Formulate Plans For Natural Gas Meeting

PLANS for the New Orleans convention of the Natural Gas Department, May 9-12, took definite shape at a recent meeting in Dallas of the arrangements, program and publicity committees for the convention, Robert W. Hendee, chairman of the Natural Gas Department of the American Gas Association, presided over the planning conference, which was called by E H. Poe, secretary of the department. Slogan for the convention will be "Our Job Is a Selling Job."

E. H. POE

Among topics scheduled for the meeting were two on the first day's general session: "Natural Gas at the New York World's Fair," and "Uncle Sam and Natural Gas." Others include an address on "National Advertising," "Human Engineering in Industry," "Liquefied Petroleum Gas Sales," and "The Available Service of the Natural Gas Department." "Air Conditioning with Gas" will be the topic for a general discussion.

Addresses by the president of A. G. A., N. C. McGowen, United Gas System; Chairman Hendee, and Merrill N. Davis, president of A. G. A. E. M., will feature the first morning session.

One of the most interesting contributions to the work of the convention is expected to be found in the round-table luncheons at which groups representing every phase of the industry will meet to discuss problems. For Thursday's luncheon the Home Planning program of the A. G. A. will be discussed with Herman Russell, Rochester Gas & Electric Co., presiding.

Present at the Dallas meeting of committees were the following from New Orleans Public Service Co. of the convention host city; W. H. Harter, H. E. Meade, H. L. Gaidry, J. C. Barnes and S. L. Drumm.

A. G. A. was represented at the meeting by Natural Gas Department Chairman Hendee, Mr. Poe, and Eugene D. Milener, secretary of the industrial section.

Others included: J. V. Strange and E. L. Rawlins, United Gas System, Houston; D. A. Hulcy, C. L. May, J. H. Dunn, J. L. Foster, R. G. Soper, Will C. Grant and W. G. Wiegel, Lone Star Gas System, Dallas; Frank B. Long and W. Jennings Young, Oklahoma Natural Gas Corp., Tulsa; A. E. Higgins, Pittsburgh Equitable Meter Co., Pittsburgh; L. L. Baxter, Arkansas Western Gas Co., Fayetteville, Ark.; George M. Parker, Mississippi Valley Fuel Co., St. Louis; Fay C. Walters, Panhandle Eastern Pipe Line Co., Kansas City; A. L. Forbes, Jr., El Paso Natural Gas Co., El Paso; Max Watson, Colorado Interstate Gas Co., Amarillo; and C. D. Greason, Gas Service Co., Kansas City.

■ ■

Natural Gas Turned On In New Lordsburg, N.M. System

Natural gas has been turned on in the newly completed section, south of the Southern Pacific Co. tracks, of the Lordsburg, N. M., municipal distribution system. Work is now under way on the northern part of the project. The new system, which has been partially financed by PWA funds amounting to $44,000, will serve 355 subscribers.

Construction work for the Lordsburg pipe lines has been under the supervision of Harvey Forward, representative engineer for the Headman-Ferguson Engineering Co., Phoenix, Ariz., and P. L. Grattan of the Border Plumbing Co., El Paso, Texas, contractor for the Lordsburg system. V. G. Detrich has acted as city representative in securing patrons for the new gas.

The southern part of the system, now in use, was given a 24-hour air pressure test of 60 lbs. to ensure perfect pipe installation before being put into actual use the latter part of January. Mr. Forward expects the entire system, which will be large enough to accommodate 680 homes, to have been completed by March 1.

■ ■

Southwestern Announces New Appointments

J. B. Reeder has been appointed merchandise sales manager of the Southwestern Gas and Electric Co., Shreveport, La., A. Lieberman, company president, announced recently. Formerly division sales manager in the East Texas division of the company, Mr. Reeder succeeds R. M. Winsborough, who has been transferred to Chicago with another company.

A. J. Kane, formerly assistant advertising manager under Mr. Winsborough, will now have full charge of this department.

INSULINE

Smashes Steam and Heat Treating Costs

At California winery one boiler carries double load—bolt manufacturer reduced heating-up time from 90 to 20 minutes—electrical fixture maker cut fuel cost per piece 57%—R. R. power house reduced boiler wall outside surface temperature 375° F.—State Hospital saved $2000 in fuel last winter with 1/3 greater load . . . just a few instances of economies obtained by use of INSULINE products.

Learn how INSULINE materials (light weight, low heat storage insulating refractories for service to 3000° F., in brick, block, concrete and lagging form) effect big economies.

Write for Bulletins, Series G.

QUIGLEY COMPANY, INC.
56 W. 45 ST., NEW YORK, N. Y.

Makers of HYTEMPITE *"The World's Standard High Temperature Cement".*
SPECIFICATION FIRE BRICK · INSULBRIX · INSULAG · INSULBLOX · INSULCRETE
Q-CHROMASTIC · HEARTH-CRETE · Q-SEAL · TRIPLE-A PROTECTIVE COATINGS
CAST-REFRACT · Q-CHROME · DAMIT · ACID-PROOF CEMENTS · *ANNITE*

Distributors with Stocks and Service in Important Industrial Centers Throughout the United States, Canada, and in 32 Other Countries.
In Canada, Quigley Company of Canada, Limited, Lachine, P. Q.

3275 Water Heaters sold in 6-week Southern California campaign

SALES { in the lowest price bracket totaled **28.8%**
in the medium price bracket totaled **45.8%**
in the high quality bracket ($75 and up) totaled **25.3%**

60 percent of the heaters in the quality group ($75 and up) had tanks of strong, non-rusting EVERDUR Silicon Bronze

THAT'S the story of a short, aggressive "dealer contest". The sales quota was exceeded—not counting an indeterminable number of unrecorded sales influenced by promotional activities such as local newspaper advertising, dealer help material, and attractive window arrangements using the life-size, full-color display shown on this page.

Significant is the fact that, in this 1937 campaign, 16% of all heaters sold had Everdur tanks—against a mere 4% in a similar 1936 contest. Yes, quality and durability can be increasingly sold as the public better understands the story:

For years, EVERDUR Metal tanks have proved their superiority. Rustless as copper, strong as steel, EVERDUR is standard for non-rust tanks with more than 50 makers of household water-heating equipment.

For the utility, water heaters with tanks of non-rust EVERDUR are profit-makers because of the long, trouble-free service they render. They mean steady, uninterrupted consumption of gas, fewer service calls... make possible more attractive term payment plans. Cash in on the popularity of EVERDUR Metal in your water heater promotions!

CLEAN HOT WATER always
from a TANK of NON-RUST
EVERDUR METAL
(Strengthened Copper)
End Rust Troubles-Save Money
Know the Joy
of SUPERIOR SERVICE given by this highly efficient, economical fully-automatic water heater
with its tank of
EVERDUR METAL
"Everdur" is an Anaconda Copper alloy with the strength and ruggedness of steel

This window display on non-rust EVERDUR tanks will help your water heater sales drive.

TEAR OUT AND MAIL NOW

The American Brass Company
Waterbury, Connecticut

Please send us the EVERDUR window display.

Signed .....

Company .....

City ..... *State* .....

ANACONDA from mine to consumer

Everdur Metal

RUSTLESS AS COPPER
STRONG AS STEEL

87157

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

"EVERDUR" is a trade-mark of The American Brass Company, registered in the United States Patent Office.

Gas Industry Has Part in Los Angeles Meeting of Western Metal Congress

MANY papers of particular interest to the gas industry will be delivered by eminent specialists at the Western Metal Congress, western regional Conference of the American Society for Welding and 1938 spring meeting of the American Society of Mechanical Engineers, which will be held in Los Angeles during the week of March 21. More than one hundred papers on industrial metals, their uses, fabrication and treatment will be presented by nationally recognized authorities, according to Dr. Donald S. Clark, assistant professor of mechanical engineering, California Institute of Technology, who is program chairman.

Coming in the same week in which the Pacific Coast Gas Association will hold its spring sales conference in Los Angeles, it was expected that many gas men would welcome the opportunity to attend both meetings.

More than 150 firms, according to officials of the American Society for Metals, which organization is running the event, have arranged to display their products. Many are bringing displays from the East for the first western presentation.

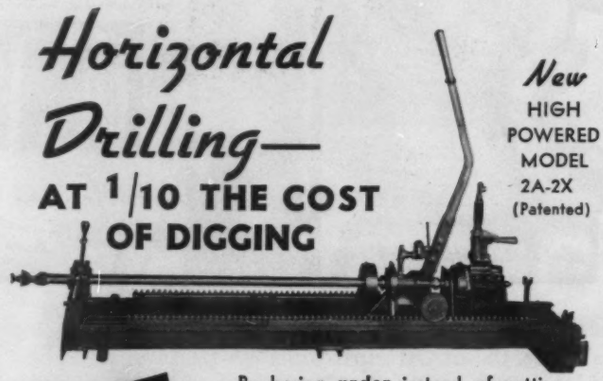
Some of the papers on the Western Metal Congress programs follow:

"Metals Used in Pipe Line and Pipe Line Station Construction," by L. F. Scherer, assistant chief engineer, Texas Pipe Line Co., Houston.

"Theory and Practice in Pipe Protection," by Dr. Gordon N. Scott, pipe line technologist, Los Angeles.

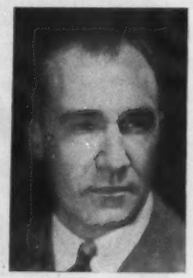
"Valves for the Petroleum Industry," George Sherer, chief metallurgist, Merco-Nordstrom Co., Oakland.

"High Temperature Characteristics as Revealed by Rupture Tests," by W. G. Hildorf, chief metallurgical engineer, Timken Roller Bearing Co., Canton, Ohio; C. L. Clark, research engineer, department of research, University of Michigan, Ann Arbor, and A. E. White, director of engineering research, of the same university.


Horizontal Drilling—
AT 1/10 THE COST OF DIGGING
New HIGH POWERED MODEL 2A-2X (Patented)
AVOIDS
Ditching
Tunneling
Ramming
SAVES
Pavements
Pipe Wrappings
Money
PERMITS
Uninterrupted Traffic
Fastest Installation
Write for Bulletin No. 5
By boring under instead of cutting through Hydrauger saves time and money every time pipelines or service connections cross paved highways, streets, railroads, etc. The Hydrauger, operated by compressed air, bores horizontal holes of seven different sizes from 2½" to 14½" diameter. Through these holes pipe is installed without ramming, without damage to its wrapping, without opening seams. There is no after-settling of the surface, no back-filling, no traffic interruptions or hazards. Hydrauger gives these unequaled advantages and saves 90% of the usual cost—and does it in 75% less time!
HYDRAUGER CORP., Ltd.
116 New Montgomery Street • SAN FRANCISCO
Distributors in Principal Cities
HYDRAUGER
"The Mechanical Gopher"

Sales Drive Opens April 1 For Home-Heating Equipment

THE Association of Gas Appliance and Equipment Manufacturers has announced April 1 as the opening date of the nationwide sales promotion campaign for gas-operated home-heating equipment. The drive, which will take the form of a contest, will close November 30, 1938. H. P. Mueller, president of the L. J. Mueller Furnace Co., Milwaukee, Wisc., is chairman of the gas house-heating and air-conditioning division of the A.G.A. E.M., sponsors of the project.


H. P. MUELLER

This 1938 sales program will be known as the "G-Man Reward Roundup." All announcements and promotional literature will be styled on the order of confidential bulletins from headquarters. Appearing on all circulated material, the "G" in the title of the contest will actually stand for "Gas," with the "a" and "s" in small type.

The promotion drive will be open to two main groups: (1) Utilities, sales managers and their salesmen; (2) Jobbers and retail dealers, sheet metal contractors, and heating and plumbing contractors.

More than $20,000 in prizes will be offered to the utility group with cash awards for company sales managers, monthly awards for utility salesmen, and final cash awards to the salesmen who maintain outstanding activity throughout the eight-months program. Merchandise awards amounting to $15,000 will be presented to participants in the retail section of the contest.

In order that participants may compete on an equal basis, utility companies will be classified in divisions, giving salesmen in smaller communities the same opportunity of winning as those in larger cities. Retailers will be classified geographically on a comparable scale.

■ ■

Louisville G. & E. Completes Century of Service

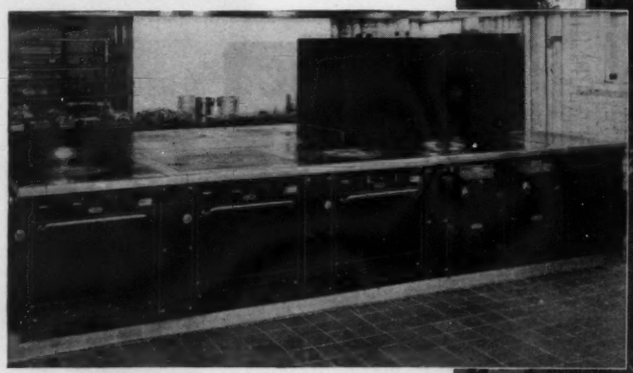
The Louisville Gas and Electric Co., Louisville, Ky., last month celebrated its one-hundreth anniversary of service. Commemorating the event, the Louisville Courier-Journal published a 32-page rotogravure special section devoted to a history of the company and its place in the growth of the city during the past century. The Louisville Co. is affiliated with the Public Utility Engineering and Service Corp., Chicago. T. B. Wilson is president.

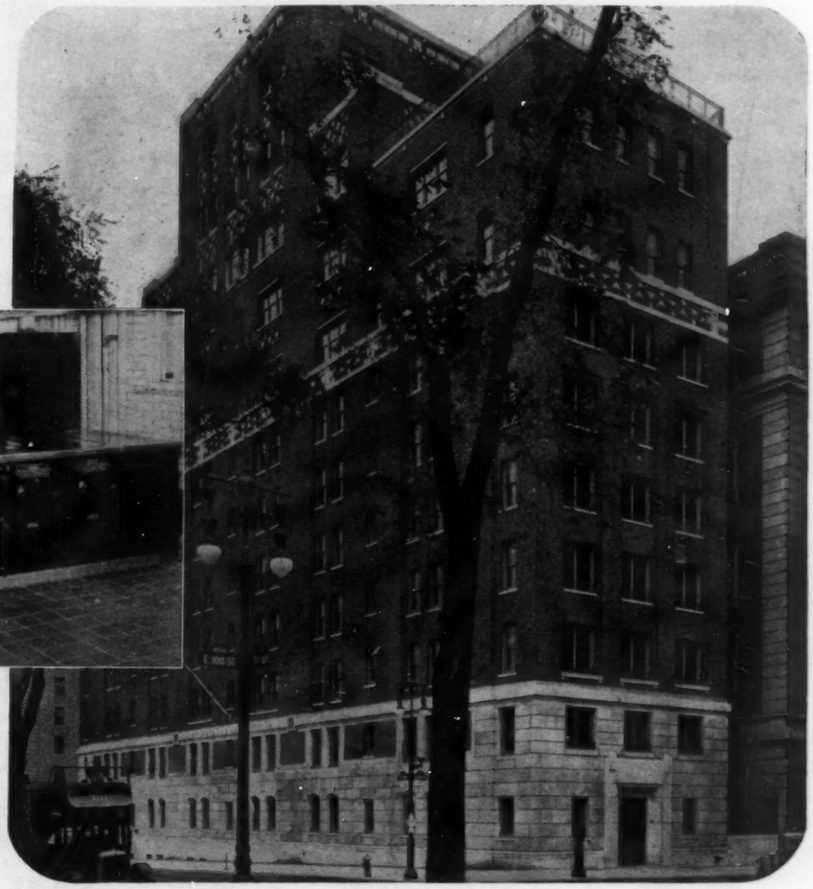
■ ■

De Pew Appointed Foreman

L. E. De Pew succeeds W. K. Weaver as foreman of the Shamrock district of Lone Star Gas Co. pipe line department, R. Vandercook, department superintendent, announced recently. Mr. De Pew was formerly assistant foreman for the Pueblo district where James A. Jarboe will replace him.

Only the best would do





Above: Battery of 6 Magic Chef Heavy Duty Gas Ranges with Ovens, 2 Heavy Duty Broilers, and 2 sections of Double Roasting Ovens, installed in the Mt. Sinai Hospital Kitchen.

Right: Mt. Sinai Hospital Building, Fifth Ave. at 100th St., New York City. Established 1852. Affiliated with Columbia University since 1923. Value of grounds, building and equipment in excess of $12,000,000.00.

—so Mt. Sinai chose Magic Chef

MAGIC CHEF AUTOMATIC HEAVY DUTY EQUIPMENT

Exclusive Features

Red Wheel Lorain Oven Regulator
Magic Chef Top Heat Control
Uniform Heat Top — Insulated Cooking Top
Automatic Safety Oven Pilot
Magic Chef Non-Clog Burners

•

Gas Economy — Greater Speed
Easiest to Clean — Simplest to Operate
Higher Efficiency — Greater Durability

COMPLETE AND FLEXIBLE LINE OF RANGES, ROASTERS, BROILERS, BAKERS

•

AMERICAN STOVE COMPANY

Boston • New York • Atlanta • Cleveland • Chicago
St. Louis • Philadelphia • San Francisco • Los Angeles

LOOK FOR THE RED WHEEL WHEN YOU BUY A MAGIC CHEF

● For nearly a century Mt. Sinai has stood for the finest in hospital service. Its uncompromising high standards have earned for it a position of national prominence ... More exacting demands than those asked by this hospital of its new cooking equipment have seldom, if ever, been made ... The Magic Chef Heavy Duty Gas installation shown above satisfactorily meets these requirements ... Magic Chef also has the best answer for your kitchen cooking problem—whatever your demands may be. Phone or write your nearest branch.

USE GAS—THE IDEAL FLEXIBLE FUEL

Magic Chef
AMERICAN STOVE COMPANY

"helps keep. . . customer satisfaction"

HEMENWAY Inc.
606-08 TEXAS STREET
SHREVEPORT, LA.
TELEPHONE 2-1185
Ark-La-Tex's Leading Home Furnishers

FURNITURE

June 21, 1937

Educational Bureau
Porcelain Enamel Institute
612 North Michigan Avenue
Chicago, Illinois

Gentlemen:

Please send me three copies each of your "Sales Manual for Porcelain Enamel" and your "Selling Points for Household Appliances." Apparently the copies we had are lost and I want our sales people to re-read those books. They contain much constructive information of selling value to us.

I wonder if you gentlemen know what a valuable selling point there is in your type of finish? The porcelain enamel is exactly what you say it is: "The lifetime finish." It never wears out. But there is another thing about it that never wears out and that is the customer's satisfaction. That means a lot to any store. If our customers are not satisfied we will presently find ourselves out of business. Porcelain enamel finish on refrigerators, ranges, washing machines, heaters, table tops and breakfast sets help us keep that needed customer satisfaction.

And invariably there is a longer profit in the porcelain enameled appliances. While we are after sales - what we are really after is profits. Naturally, therefore, we feature porcelain enamel.

Yours very truly,

HEMENWAY Inc.

Frank Hemenway, Jr.
President

FH-Jr.:NR

PORCELAIN ENAMEL INSTITUTE, Inc.
612 North Michigan Avenue, Chicago

PORCELAIN ENAMEL

PORCELAIN ENAMEL THE Lifetime Finish

SALES SLANTS

A month by month presentation of experiences on the sales front.

The Mental Attitude that Makes Sales

THE subject, "Developing the Right Mental Attitude" must be approached on the basis that no matter how up-to-date your tools are to make sales, if you are in any way deficient in the right attitude of mind, you will not make those sales.

If the question were put, "What do you regard as the essential requirements in the selection of a sales executive to head the department of an establishment?" the answer might be briefly summarized as follows:

Does he possess the right mental attitude, (a) to work with people; (b) to make friends; (c) to radiate good cheer, sympathy, and kindliness; and (d) to enthuse and inspire confidence.

Many sales executives and salesmen in the industrial engineering and technical field, who otherwise are eminently well qualified as business men, who know the production processes and distribution methods of their specialized business, are woefully lacking in these human qualities. Because of these shortcomings these men are handicapping themselves in their progress to obtain recognition for advancement.

Of the many problems with which the business executive has to cope today, there is none more important, none more difficult of solution than that of handling and dealing with men.

Industries sell to a public. That public doesn't have to buy from any one industry. That public is a peculiar thing. It is busy, fickle, indifferent and exacting. Less is known about it than should be known. Certain fallacies, however, are commonly recognized:

1. That the public will automatically seek the best.

2. That the public knows the difference between price and value.

3. That the public will automatically reward enterprise and service.

● **HOMER J. BUCKLEY, president, Buckley, Dement & Co., Chicago, Ill., in an address before the Industrial Gas Section of the American Gas Association at the Palmer House, Chicago, June, 1937.—(Abstract by GAS).**

4. That the public knows what it wants.

5. That the public will demand over any great length of time what it is not reminded of.

Therefore, industry has sales conferences and clinics with projected educational methods to simplify the selling problem and to equip it to do an understanding job by developing the right approach and acquiring the right attitude of mind.

Selling is an absolutely essential function in all enterprises depending on public support. It is one of the major problems of the gas industry.

Selling is a very human process, because no matter how carefully the prices are worked out, or how splendid the quality of the products may be, orders are secured and controlled because of that quality which may be classified under the cloudy phrase, "personality"—which can tip the scale in favor of a particular firm or line of merchandise—anytime—regardless of how solidly intrenched the business may appear to be.

Your own customers are often your best prospects for more business. Preach the gospel of selling the full line to all present customers and then support this personal selling effort with promotional influences that will pave the way for more business from present customers.

To neglect to reach out for new customers is to throw away future income, but to neglect to cultivate your present customers is to throw away capital assets.

Give all your products an extra sales appeal. The public is sick and tired of price appeal. In the long pull, price appeal and concessions (giving a little here and a little there) lose rather than gain in strength with repetition and destroy profits of the business. Price appeal requires the continuous stimulus of new concessions. It is all smash and no grab. It prevent sales as well as makes them because it destroys confidence in the whole price structure of any business.

The seller who maintains prices feels better because he enjoys the respect of himself. The buyer feels better because he knows that a more ruthless bargainer is not getting an advantage.

Bargaining makes liars of both buyers and sellers, and thereby creates mistrust. When orders are scarce and volume is needed, the temptation to cut prices is almost irresistible. But that it can be resisted is proved every day in thousands of transactions.

■ ■

San Francisco Groups Plan Water Heater Sales Drive

On Friday evening, February 18, a joint meeting of the Master Plumbers Association of San Francisco, the Water Heater Manufacturers & Representatives, and the Pacific Gas and Electric Co. was held in San Francisco. Purpose of this meeting was to discuss plans for local participation in the national Prize Parade, the A.G.A.'s 1938 automatic gas water heater campaign which will continue from January 1 to October 31.

At the San Francisco meeting, J. J. McCloud, president of the Master Plumbers Association of San Francisco, presided. Clifford Johnstone, Pacific Coast Gas Association, introduced a skit written especially for the occasion.

■ ■

M. McGeehee Transferred

Marvin L. McGeehee, former local sales manager for the Ardmore district of the Oklahoma Natural Gas Co., has been transferred to Shawnee, Okla., as sales manager for that district, Frank Padden, district manager, announced recently.

A.G.A.E.M. "Tie-in" Advertising Contest Starts This Month

THE Association of Gas Appliance and Equipment Manufacturers will officially open its nationwide advertising contest on March 1, and continue until midnight, Dec. 31, according to an announcement by Merrill N. Davis, president of the Association and executive vice-president of the S. R. Dresser Manufacturing Co., Bradford, Pa.

Designed to stimulate interest among local gas companies in the American Gas Association's national advertising program which stresses the "promotion of gas as a modern fuel for domestic, commercial, and industrial purposes," the contest is open to advertising managers of gas utilities and combination companies operating in the United States and Canada. Cash prizes amounting to $1000 will be awarded by the A.G.A.-E.M. to those companies whose local advertising campaigns best tie in with the current A.G.A. program. Prize money will be awarded as follows: first prize—$200; three prizes of $100 each; five prizes of $50 each; ten prizes of $25 each. An embossed certificate will accompany each cash award.

The donors have suggested that all prizes be awarded to the individuals responsible for the winning campaigns and that individual names accompany test entries. This point is optional with the companies entering the competition.

Rules prepared by the contest committee, of which F. E. Sellman of New York, treasurer of the Association of Gas Appliance and Equipment Manufacturers, is chairman, provide that all forms of local advertising such as newspaper copy, window displays, direct mail and other promotional literature, radio, magazine space, and car-cards and outdoor billboard advertising are eligible for entry in the competition. However, each local program must center around the promotion of one or more gas appliances of a specific manufacturer, but the manufacturer may enter as many local campaigns as desired.

Prizes will be awarded on the basis of general distinctiveness of the advertising and the most effective use of the A.G.A. "tie-in" advertising material. All local advertising campaigns submitted must tie-in with the national campaign, either by the use of the material offered by the American Gas Association such as reprints of advertisements, promotional literature, newspaper mats, posters and car-cards, window displays and photographs, or by the use of text matter, slogans or art work similar to that which appears in all of the national advertising material.

Entries of newspaper advertisements will be by means of proofs of such advertisements; promotional literature and car-cards will be by samples of same; window displays and outdoor posters will be submitted in photograph form, and radio programs will be judged from scripts. The entries will be passed upon by a board of not less than three judges.

■ ■

These Therms, accompanying a float entered in a local carnival by The Kidderminster (England) Gas Co., won first prize for the group and gained much publicity for the company.

A Non-Advertised Brand Is Not a Bargain Brand

MY WIFE and I recently decided to buy a new radio. We had a brand "A" in mind. Attracted by advertising, we went to the store of a dealer who offered brands "A," "B," "C," and "D." He showed us the "A" line and then led us to his "B" display. Knowing, of course, that we were interested in "A," he did what I thought was a piece of good salesmanship by showing us how "B" differed from "A" and how our choice was "better." He did this same thing with "C" and "D," accomplishing, by so doing, some nice flattery for us while deftly showing us the radios he said were the best in the country. I was silently complimenting the man on his sales ability when suddenly he became extra-confidential and said, "Now you've seen them all, but I want you to see the set which I personally recommend."

He led us into an audition room where he had a number of "X" radios on display. "That 'A' you like," he said, "is a nine-tube job and it's a very fine radio, but look at this one! Here's a 14-tube set, a speaker twice as big as the 'A's,' special tubes, special construction, etc., and it costs only $10 more than the 'A'."

I wondered what this was all about and what it was going to lead to. I said, "I know the 'X' used to be a good set, but they had some difficulty a while back and since then I haven't seen any advertising of theirs."

"That's just the point," said the dealer. "Let me tell you the truth about this business of advertising. How much do you suppose 'B' and 'A' and the others spend for advertising every year?"

To draw him out I said I had no idea.

"Hundreds of thousands of dollars," he said. "And who do you think pays for that advertising? You do. Now, 'X' here is not doing any advertising so they can afford to sell a much better set for practically the same money as the advertised brand."

That was enough. I raised "ned"

with the dealer. I asked him if he realized that it was advertising that had brought me into his store, that it was the advertising of "A," "B" and other manufacturers that enabled him to practice his bootlegging in his back room, that it was advertising that brought all his customers into his store, and that without advertising, he as a dealer wouldn't mean a thing to me nor to any of his other customers and prospects.

■ ■

California Appliance Society Holds Spring Range Drive

The annual Spring Gas Range Campaign of the Gas Appliance Society of California is scheduled for March 17 to 26. The slogan "Step Forward and Save $15" will be featured in all advertising including radio, dealer cards, slides in moving picture theatres, etc.

During the campaign a $15 discount will be offered to the purchaser of a current sticker plan gas range having a regular cash price of $134.50 or more, provided such range is equipped with an electric clock and lamp. The discount will not apply to any range regardless of price unless it is equipped with an electric clock and lamp.

Pacific Gas and Electric Co., San Franciso, will support the campaign with newspaper advertising in some 200 weekly and daily newspapers.

Cash prizes totaling $480 will be offered in a Window Display and Ad Writers' Contest.

■ ■

Ancient Use of Natural Gas To Be Shown at S. F. Fair

One of the features of the 1939 Golden Gate International Exposition on San Francisco Bay will be the "China Village," a reproduction of an ancient Chinese walled city, where a crude type of gas range will be in operation in the native dwellings. As early as 900 A.D. or about a thousand years before gas was utilized in America, the Chinese were using gas ranges burning natural gas.

Gas for these early ranges was conveyed long distances by means of hollowed-out bamboo tubes joined together with lead couplings and pewter elbows. The gas was first captured by placing a large inverted funnel over the gas well. The burning tip of iron was placed immediately under a "wok", a sort of combination frying pan and cauldron.

■ ■

National Sales Conference Held by A.G.P. Corporation

A national "A B C" sales conference was held by the American Gas Products Corp. from Jan. 31 to Feb. 3, in New York City and Mount Vernon, N. Y. The conference was attended by district sales managers, salesmen, affiliated representatives, engineering staff, and office staff members from all parts of the United States.

"More A, B, C's"—"A" for appliances, "B" for business, and "C" for customers —was the theme of the conference which was led by W. T. Rasch, corporation president.

View of the display floor of the new Yorkville District Office of Consolidated Edison Co. of New York, Inc., showing photo murals representing utilization of gas and electricity.

Consolidated Edison Office Enlivened by Photo Murals

THE new Yorkville district office of the Consolidated Edison Co. of New York, Inc., opened its doors on January 17 and customers were admitted to its shining display room. A two-story white stone building in the heart of the Yorkville shopping district, the new office replaces two old ones which have been closed.

The display floor presents a striking appearance. The color scheme is white, cobalt blue and lemon yellow. There are five photo murals set into niches with concealed overhead lighting. One of them, 40 ft. long, shows System employes at work in a wide variety of capacities. The others portray production, distribution and utilization of gas and electricity, also meter and appliance testing, laboratory and clerical work.

Brightly lighted from concealed sources, the showroom gives the impression of being filled with sunlight. Most of the general illumination is provided from three continuous troughs in rectangular shape, set one within the other. These hang about three ft. below the ceiling and throw light up on the white soundproof material which lines it.

Twenty service clerks handle customer applications for gas and electricity and miscellaneous inquiries. There are two cashiers and eight tellers in the cashier's cage. Frank C. Buscher is district office manager, commercial relations, and James Byrne is assistant district office manager. F. V. Hunt is acting district sales manager and R. E. Manning is his assistant. Hubbard Hoberg is showroom supervisor.

The company has taken a 25-year lease on the building which has approximately 34,000 sq. ft. of floor space. It is heated by gas-fired steam boilers and the showroom floor is air conditioned.

■ ■

Better Home Contest Planned By Northern Illinois Co.

Public Service Co. of Northern Illinois, Chicago, Ill., has announced a Home Building and Modernization Contest to stimulate mutual interest in better homes and elevate building standards. The contest started Feb. 1, and will continue through Oct. 31, 1938.

Open to company customers, the contest offers 24 prizes of $200 each, eight to be presented in each of the Northern Illinois company's four divisions.

■ ■

Gas Co. Increases Wages

Southern Counties Gas Co., Calif., put a new scale of minimum wages into effect the first of the year among Orange county, Calif., workers. The new wage scale will amount to an approximate increase of five per cent.

Keynote of Industrial Sales Conference Is Promotion

THE keynote of the A.G.A. Industrial Gas Sales Conference to be held at the William Penn Hotel, Pittsburgh, Pa., March 7-8, will be sales and sales promotion which will be the subject of the opening address. Hale A. Clark, Detroit City Gas Co., is chairman of the Industrial Gas Section.

The conference program, which is under the direction of Franklin T. Rainey, Ohio Fuel Gas Co., will include many symposiums among which are the following: "Immersion Heating Capitalizes the Advantages of Gas For Soft Metal Melting" by Elmer B. Dunkak, vice president C. M. Kemp Manufacturing Co., Baltimore, Md.; "New Developments in Applying Gas to Decorating Kilns" by Philip Dressler, vice president Swindell-Dressler Corp., Pittsburgh, Pa.; "Improvements in Crucible Melting With Gas" by Ralph D. Hawkins, Bridgeport Gas Light Co., chairman, Non-ferrous Metals Committee, and Oliver D. Pritchard, Brooklyn Union Gas Co., Brooklyn, N. Y.; "A Discussion of Gas in the Food Manufacturing Industries" by T. W. Halloran, New York Power & Light Corp., Albany, N. Y., chairman, Food Industries Committee.

Papers will also be presented on the following subjects: "Study of Propane and Butane as Industrial Fuels" by Paul G. Ziegelbauer, Detroit City Gas Co., Detroit, Mich.; "A Discussion of Up-to-date Gas Forging Practices" by M. W. Martin, Public Service Co. of Indiana, Indianapolis, Ind.; "A Discussion of Gas in the Glass Industries" by Harvey C. Weller, The Surface Combustion Corp., Toledo, Ohio.; "Selling Industrial Gas During a Recession" by T. E. Butler, Peoples Natural Gas Co., Pittsburgh, Pa.

Industrial and commercial air conditioning with gas will be covered by two papers: "Gas Engines" by E. P. Kramer, Atlanta Gas Light Co., Atlanta, Ga., and "Dehydration" by F. M. Johnson, The Surface Combustion Corp., Toledo, Ohio.

Included in the conference events will be an Industrial Gas Men's luncheon.

■ ■

George H. Bradley, Oil and Gas Executive, Dies

George H. Bradley, pioneer New York oil man and natural gas executive, died at his home in Bolivar, N. Y., on February 6. At the time of his death Mr. Bradley was treasurer of the Empire Gas and Fuel Co. and the Bradley Producing Co., distributors of natural gas through the southwestern part of New York state. Mr. Bradley resigned three years ago as vice-president of the State Bank of Bolivar.

■ ■

Len Miller Heads Committee

Len Miller, Southern Counties Gas Co., Los Angeles, Calif., was recently appointed by R. I. Snyder, chairman of the Utilization Committee, Technical Section of the Pacific Coast Gas Association, to act as chairman of a committee to study the progress and development in gas-fired air-conditioning equipment.

Plans for World's Fair Gas Exhibit Published

GAS Exhibits, Inc., has recently published in pamphlet form a prospectus outlining the plans, exhibiting space, costs, and facilities for exhibitors in the gas industries building, New York World's Fair which is scheduled to open to the public April 30, 1939 and continue through November 1, 1939. The pamphlet is for the guidance of manufacturers of gas appliances and accessory equipment.

The prospectus includes a renting plan, showing in detail the exhibition spaces to be provided in the building now under construction in the exhibit area of the Fair site. Another map shows the plan of the entire exhibit area, with the location of the Gas Industries Building clearly marked in relation to entrances, and other exhibitors' buildings.

The gas industry's exhibit will occupy a plot of 87,042 sq. ft. in the Community Interests Zone. The plot is S-shaped and 460 feet long. A circular "Court of Flame" at one end is to be the focal point of the exhibit, with four 90-foot pylons surrounding a large jet of gas to be kept burning night and day.

A model "all-gas house", where the latest and most efficient types of appliances for cooking, refrigeration, space and water heating and air-conditioning will be displayed, and an auditorium seating 350 persons will be included in the exhibit building, as well as exhibition space for manufacturers' displays.

■ ■

Marrion Plans To Enlarge Coquille, Ore., Gas Supply

W. E. Marrion, president and manager, of the Coast Oil Co., Coquille, Ore., is planning an expansion move to enlarge the newly developed natural gas supply for Coquille. At the present time Coquille is receiving gas from only one well, located in the Fat Elk area. New drilling operations will be carried on at Marshfield, Myrtle Point, and North Bend. The company's No. 2 well is now nearing completion, and Mr. Marrion expects to have completed a No. 3 well during the spring months.

Since there is only one gas producing well in the Oregon area, Mr. Marrion, who is sole owner of the Coast Oil Co., as well as of the distribution system for this region, plans to install a butane standby.

■ ■

A.G.A. Launches First Issue of "High Time"

The American Gas Association has just published the first issue of its new house organ, "High Time," for the purpose of dispersing news concerning the newly organized Home Appliance Planning Bureau.

Director John F. Quinlan, head of the new A.G.A. bureau, announced in "High Time" that literature dealing with all phases of the national contest for "all-gas homes" will be sent to members of the Gas Industry as soon as possible. In the March and April issues of the leading architectural and building magazines the program for the A.G.A. nation-wide architects' and builders' contest will be announced, declared Mr. Quinlan.

SYNCHRONIZED COMBUSTION CONTROL • • •

GENERAL CONTROLS
B55 SLOW OPENING GAS VALVE • • •

Regulates gas flow and damper opening simultaneously for perfect ignition and combustion conditions. Approved by Underwriters and Associated Factory Mutual.

Complete size range. Giant valves for industrial applications . . . and small compact units for mounting inside domestic furnace and conversion burner casings.

Write for new 1938 Catalog.

GENERAL CONTROLS
1505 Broadway, Cleveland, Ohio
267 5th Ave., New York City, N.Y.
1370 Harrison St., San Francisco, Calif.
450 East Ohio St. . . . Chicago, Ill.

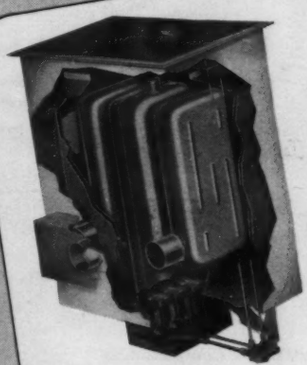
4 PUBLIC RELATIONS *Experts*
... That Never See The Public!

Out of sight and out of the way, these famous Payne "Under Floor" furnaces are doing a whale of a selling job for GAS.

Operating quietly, efficiently and economically, the Payne Floor Furnace, Single Register, Duplex and Triplex are telling thousands of people that GAS is the ideal fuel. They are born load-builders. And there is plenty of reason for their superiority . . . for their ability to sell GAS.

Payne has been making gas-fired appliances exclusively for 25 years. All of Payne's resources and know-how are concentrated in this one field. Payne designs and produces its units in America's most modern furnace plant.

It's no secret that Payne engineers are really doing things with GAS—and, likewise, it's no secret that GAS is really going places with Payne!



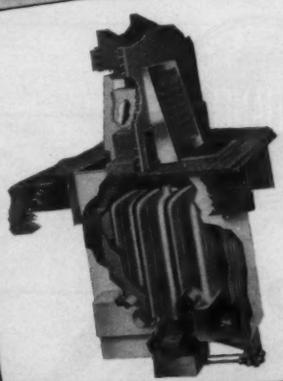
PAYNE FLOOR FURNACE

The most economical and efficient floor furnaces ever built. Streamline construction provides unusually large heating surface.

PAYNE SINGLE REGISTER FURNACE

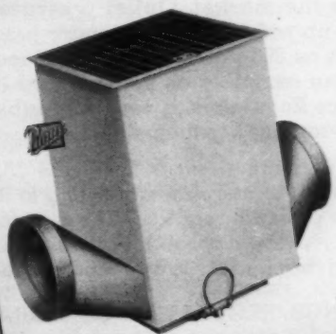
Fully vented, may be installed without cutting into studding or plaster. Used particularly in heating single rooms, halls and bathrooms.

THE IDEAL FUEL GAS



PAYNE DUPLEX REGISTER FURNACE

Adaptable to various requirements. One unit may heat two separate rooms or suites, either on one or two floors. Automatic control available at slight extra cost.



PAYNE TRIPLEX REGISTER FURNACE

Ideal for heating the small home. Two cold air grilles located at distant points from the register eliminate floor drafts and assure even circulation.

Payne FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

REDUCING

from 800 Pounds

900
800
700
600
500
400
300
200
100

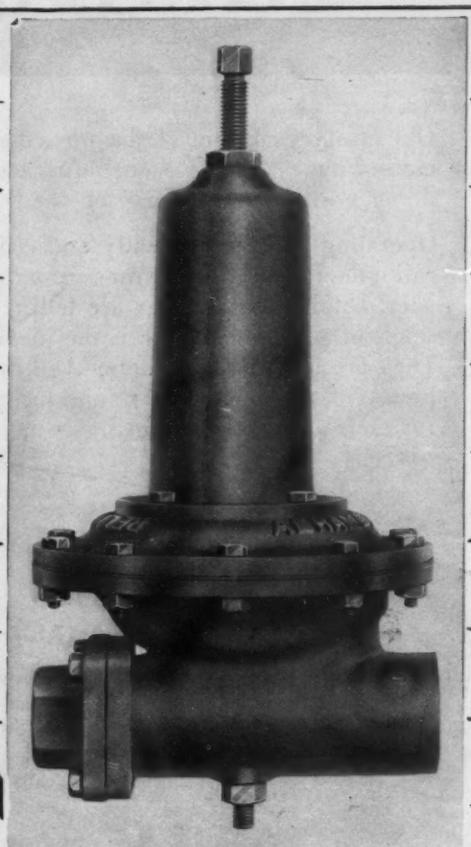
RELIANCE HIGH PRESSURE COMPOUNDING REGULATORS

Reliance High Pressure Compounding Pounds to Pounds Regulators are extremely compact and suitable for installation in small spaces. They will efficiently deliver outlet pressures as low as two pounds. Outlet pressures range up to seventy-five pounds—may be obtained merely by using a reducing ring and the proper adjusting spring, but the compounding feature will not function on pressure above six pounds.

The capacity of these Regulators greatly exceeds that of any other regulator of equal size on the market. Outlet pressures are locked up with safety on primary pressures as high as 800 pounds. The valve seat has the same assembly as the standard line of Reliance Regulators, is very accessible and can be replaced in the field.

Made in three sizes: ¾", 1" and 2", with orifices of various sizes according to the operating pressure required. These regulators embody every desirable feature and have been giving perfect satisfaction for years.

RELIANCE REGULATOR CORPORATION
Send for Bulletin No. 45
1000 Meridian Avenue Alhambra, California



Reliance High Pressure Compounding Regulator. Fully Patented.

REGULATORS YOU CAN RELY ON
RELIANCE
SINCE 1910
TRADE MARK

to 5

RELIANCE REGULATORS

Positive Displacement Meters for Liquids

By P. W. HILL

Chief Engineer,
Smith Meter Company

THE necessity for accurate measurement in the sale of petroleum products (including liquefied petroleum gases), is obvious, and it is in this field that positive meters have found their most ready acceptance and most exacting requirements.

P. W. HILL

The term "positive displacement meter" is variously defined, but should be interpreted as one which isolates positively, successive volumes of the fluid being metered, in a chamber of definite content, and with this action as a basis registers the quantity in units of volume.

Various types of positive meters have been developed using various mechanical principles, including the reciprocating piston, the oscillating piston, the nutating disc, and the geared or lobed impeller type. It is the purpose of this paper, however, to describe a type known as a rotary sliding vane meter developed a few years ago by R. Stanley Smith, and now marketed as the Smith Meter.

This meter (See Figs. 1 and 2) consists of a flanged hollow cylindrical casting with a cover, a base and inlet and outlet flanges. Within the case a concentric cylindrical rotor is mounted with ball or roller bearings on a vertical stationary shaft. Moving in and out of the rotor, through slots, are four blades mounted 90° apart in the same plane as the vertical axis. Each opposite pair of vanes are yoked together as one casting. The motion of the vanes is positively controlled by a stationary cam mounted on the shaft through the rotor. As the rotor revolves the position of the vanes is changed from being extended, when passing the measuring sector, to being withdrawn while passing the bridge or block mounted at the opposite side of the case. In this manner the vanes form a measuring chamber between the surface of the rotor and the case. The vertical position of the rotor is maintained by spring acting against a ball thrust bearing so that the rotor turns without contacting the top or base. Also the vanes do not touch the case since their position is continuously controlled by the cam. By this construction friction is negligible, and the rotor and vanes turn with the fluid flow so that with each revolution four definite volumes are accounted for. Since the pressure drop across the blades is very small, there is no significant by-passing or slippage through the meter. The rotating motion is transferred to the counter by means of a shaft through a packing gland. The fine adjustment of the meter is accomplished by means of change gears.

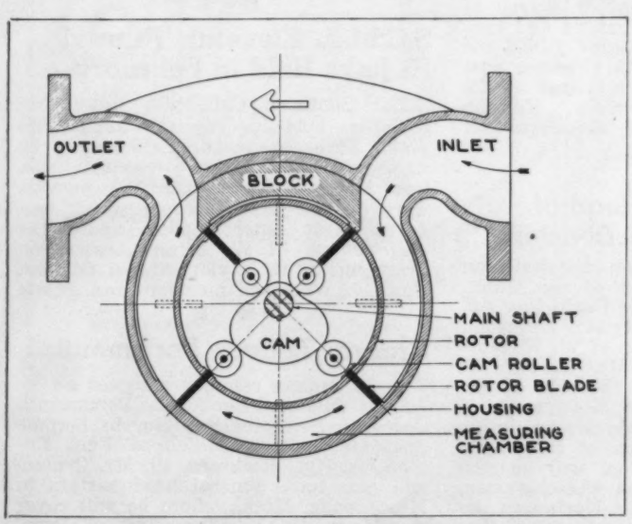


FIG. 1. A plan view of the rotary positive-displacement meter.

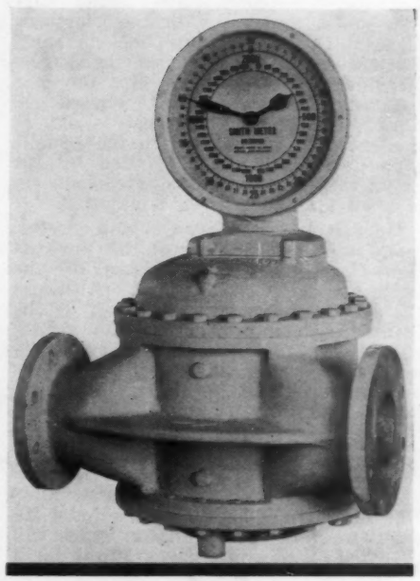


FIG. 2. Showing the refinery bulk plant type of meter with vertical dial.

In testing the performance of positive displacement meters, the pressure drop and the accuracy at several points throughout the normal range of flow rate should be considered. The pressure drop through this meter is very low, approximately that of a single right angle elbow, because of the virtual elimination of friction and the fact that the motion of the liquid is uninterrupted in passing through the meter. Since the pressure drop across the vanes is slight, precluding slippage, the accuracy is maintained throughout the range. Normally the variation in accuracy is less than 0.1 of one per cent at any rate within the normal range.

This type of meter finds many applications in the petroleum industry where liquids are handled, including use on bottled gas delivery trucks.

Yankton to Receive Natural Gas Not Later Than July 4

NATURAL gas is expected to be available in Yankton, S. D., by not later than July 4, 1938, R. H. Garrison, manager of the Sioux City Gas and Electric Co.'s South Dakota properties, announced recently. The Sioux City Co. has a contract with the Northern Natural Gas Co., a pipe line company, for extending natural gas lines from Vermillion to Yankton. Mr. Garrison has declared that construction work will be started as soon as frost is out of the ground. In addition to the 24-mile pipe line construction planned by the Sioux City Co., gas main extensions are planned for the city of Yankton.

On Feb. 1, Sioux City Gas and Electric took over the operating of the Yankton Gas Co., after the purchase of the latter company in January. Although the present franchise, taken over by the Sioux City company with the purchase of the Yankton concern, has about six more years to run and was formerly for manufactured gas, Mr. Garrison has announced that natural gas will be brought to Yankton regardless of whether or not a new franchise is given to his company or to another company.

At the present time the Vermillion Natural Gas Co. is negotiating for a 20-year franchise from Yankton which will be voted on by the citizens March 8.

■ ■

Fire Protection Association Publishes 1938 Code Volume

The National Fire Protection Association has just announced its 1938 publication of the 360-page volume, The National Fire Codes for Flammable Liquids and Gases. Compiled by Robert S. Moulton, Technical Secretary of the N.F.P.A., the book includes the 36 standards and regulations giving fire protection authorities complete information on the safe handling of both flammable liquids and gases.

Prepared in response to requests from N.F.P.A. members, the publication presents the codes in the form of suggested ordinances, regulations, or recommended good practice requirements.

Typical examples of the 36 standards are: flammable liquids ordinance, liquefied petroleum gas code (propane and butane), city gas, gas systems for cutting and welding, and fire hazard properties of flammable liquids, gases, and volatile solids. Price is $1.50 postpaid.

■ ■

Helium Gas for First Time Is Sold on Open Market

The first shipment of helium gas to be transported from the United States left the port of Houston, Texas, early in February on the German steamer Dessau for use in the LZ-30 which will be launched in about five months to replace the zeppelin Hindenburg, destroyed by fire at Lakehurst, N. J., May 6, 1937. The 2,350,000 cu. ft. of gas comprising the shipment will be placed in 468 steel bottles. This gas was produced at the helium plant at Amarillo, Texas.

Most of the supply of helium comes from the Amarillo field, where about 75,000,000 cu. ft. have been taken from an estimated supply of 1,800,000,000 cu. ft. Government control is expected to result in strict conservation of this supply.

In addition to its use in lighter-than-air craft, helium gas is now being used for life-saving purposes in treating diseases that cause breathing obstructions, in saving the lives of new-born babies, and in protecting divers and caisson workers from threatening ailments. Under the new federal law permitting the sale of helium on the open market, much of the gas will go to research laboratories and hospitals, where it will be used to relieve sufferers from asthma, bronchitis, and diphtheria. Helium can be used in these cases as it is breathed more easily than nitrogen and penetrates the lungs to a greater degree.

■ ■

P.C.G.A. Research Group Appointed By A. B. Allyne

Arthur B. Allyne, chairman of the Technical Section of the Pacific Coast Gas Association has appointed a Research Committee to study recommendations made by the section in recent years and to report on the extent to which these recommendations have been followed by member gas companies. The committee will also make suggestions as to activities which this section should undertake.

Membership of the committee is made up of the five most recent past chairmen of the P.C.G.A. Technical Section.

Guy Corfield, Southern California Gas Co., is chairman of the new committee. Other members are A. R. Bailey, Coast Counties Gas and Electric Co., P. E. Beckman, Pacific Gas and Electric Co.; Otto Goldkamp, San Diego Consolidated Gas and Electric Co.; F. A. Hough, Southern Counties Gas Co.

■ ■

Bernhardt Succeeds the Late Myron D. Kahn

Stanley C. Bernhardt recently received the appointment of general sales manager of the Estate Stove Co., Hamilton, Ohio. He succeeds the late Myron D. Kahn.

On Dec. 24, Mr. Kahn succumbed to a sudden heart attack. As he had been in excellent health until the time of the attack, his death came as a great shock to his business associates and friends.

Formerly vice-president in charge of sales for the Monitor Furnace Co., Cincinnati, Ohio, Mr. Bernhardt joined the Estate sales force in 1929. For the past five years he has been in charge of the company's New York offices. Norman J. Griffiths will succeed Mr. Bernhardt in New York.

■ ■

Hartfield Is New Head of P.C.G.A. Furnace Division

A. J. Hartfield, former vice-chairman of the Furnace Division of the Manufacturers Section, Pacific Coast Gas Association, has become division chairman following the resignation of W. W. Norton, former chairman. Mr. Norton left the gas industry after the sale of the Electrogas Furnace and Manufacturing Co. to Payne Furnace and Supply Co.

Don Fleming, manager of the Payne Co.'s Electrogas Division, will succeed Mr. Hartfield as division vice-chairman, and will also replace Mr. Norton on the Gas Exhibit Committee of the Golden Gate International Exposition.

Dates Set for Southwestern Gas Measurement School

THE Executive committee of the Southwestern Gas Measurement Short Course met in Norman, Okla., on January 24, to make definite plans for the 1938 School.

The dates for this year's Short Course were set for April 19, 20 and 21.

Gilbert Estill, Oklahoma Natural Gas Co., Tulsa, general chairman of the committee, presided during the morning session, and L. G. Rheinberger, Sinclair-Prairie Oil Co., Tulsa, chairman of the Program committee, presided in the afternoon.

The Committee approved the recommendation that a Bulletin of the Proceedings of the 1938 School be published, and a copy of this Bulletin be mailed to each person who registers for the School.

G. W. McCullough, Phillips Petroleum Co., Bartlesville, Oklahoma, was appointed chairman of the Publication committee. J. H. Page of the Gas department of the Kansas Corporation Commission was unanimously elected a member of the Executive Committee.

The next meeting will be held at the Biltmore Hotel in Oklahoma City during the Annual Convention of the Oklahoma Utilities Association on March 21, 1938, when Mr. Rheinberger will present the program for approval.

■ ■

Wisconsin Gas Section Plans March Divisions Convention

Plans for the joint convention of the Commercial and Technical Divisions of the Wisconsin Utilities Association Gas Section, to be held March 16-18, were the subject of discussion at the January 24 conference of the division committees. The convention will be held at the Schroeder Hotel in Milwaukee.

The January conference business included the appointment of the nominating committee for the Gas Section's Commercial and Technical Divisions. T. J. Danehy, Wisconsin Fuel and Light Co., Manitowoc, Wis., nominating chairman, H. B. Hummell, Wausau Gas Co., Wausau, Wis., and L. P. Ziebell, Wisconsin Public Service Corp., Green Bay, Wis., will serve as the committee.

■ ■

S.C.M.A. Eleventh Annual Hi Jinks Held in February

The Southern California Meter Association held its eleventh annual Hi Jinks Saturday evening, February 26 at the Riverside Drive Breakfast Club, Los Angeles. More than 350 persons were present for the event which featured lively entertainment under the direction of J. W. Dunn. Association president, J. B. Taylor, Signal Oil and Gas Co., welcomed members and guests

■ ■

Crahan Leaves Portsmouth

L. L. Crahan recently resigned as industrial fuel engineer for the Portsmouth Gas Co., Portsmouth, Ohio, to become associated with the Eclipse Fuel Engineering Co., Rockford, Ill. Mr. Crahan will now have general headquarters in Minneapolis, Minn., where he will cover the Minnesota, northern part of Iowa, and western Wisconsin territory.

BUTANE-PROPANE NEWS

Odorization of Liquefied Petroleum Gases

By R. F. FOSTER
Stargas Sales Engineer
Lone Star Gas Company

THE object of introducing an odorant into any gas is to give it a distinctive "smell" that will readily be noticed by the gas user when a small amount of unburned gas is escaping, or has escaped.

The odorization of propane, in our company, began in the early part of 1929, and has continued in the same manner up to the present time. "Cal-Odorant" is the odorant used and is introduced into each empty drum in the following proportion: 20 cu. cm. of Cal-Odorant to each 100 lb. lot of propane.

R. F. FOSTER

Fig. 1 shows the apparatus used in introducing the odorant into standard 100-lb. propane cylinders. After the odorant is introduced into the cylinder, the cylinder is filled and then revolved to insure proper diffusion of odorant throughout the liquid. The movements of the cylinder in transportation and handling further insures thorough mixing of the odorant with the propane.

To prevent concentration of odorant in the cylinders, they are inverted with the valve open each time they are returned to the plant for refilling. This allows any remaining odorant to be drained out.

Fig. 2 shows the apparatus for introducing the odorant into the butane that is loaded into tank trucks. The proportion used is one cu. cm. of Cal-Odorant per gal. of butane. The proper amount of odorant to odorize the particular truck is measured and introduced into the loading hose. The stream of butane picks the odorant up as the truck is loaded, and thorough mixing of the odorant and butane is accomplished in the tank by the agitation from the loading stream.

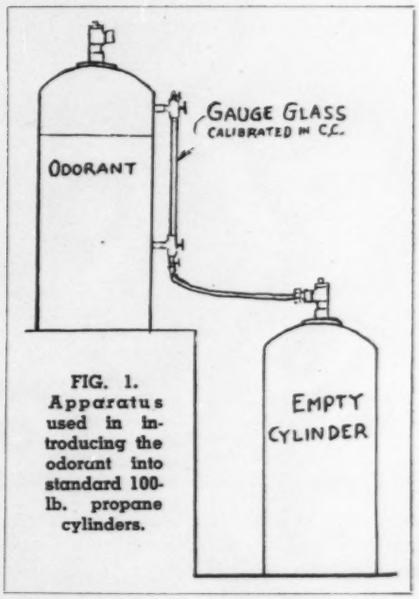


FIG. 1. Apparatus used in introducing the odorant into standard 100-lb. propane cylinders.

As some markets require odorized butane and other markets require "sweet" unodorized butane, no odorant is introduced into the tank cars. When tank car shipments require odorized butane, Cal-Odorant in separate one-gal. cans is placed in the dome of the tank car and introduced into the gas when the cars are unloaded.

Fig. 3 shows a standard butane odorizer, installed at the bulk distribution station, for odorizing the gas as it is unloaded from the tank car into the storage tank. In the same manner as above, the stream of butane picks the odorant up as the tank car is unloaded. Thorough mixing is accomplished in the storage tank by the agitation from the loading stream. The proportion used is one cu. cm. of Cal-Odorant per gal. of butane (or 2.6 gals. per tank car).

Pentalarm is used as the odorant in some distribution stations. It is introduced in the same manner as shown in Fig. 3, except that only 1.4 lbs. of Pentalarm are used per car of butane (approximately 10,000 gals.).

All gas in the customer tanks is

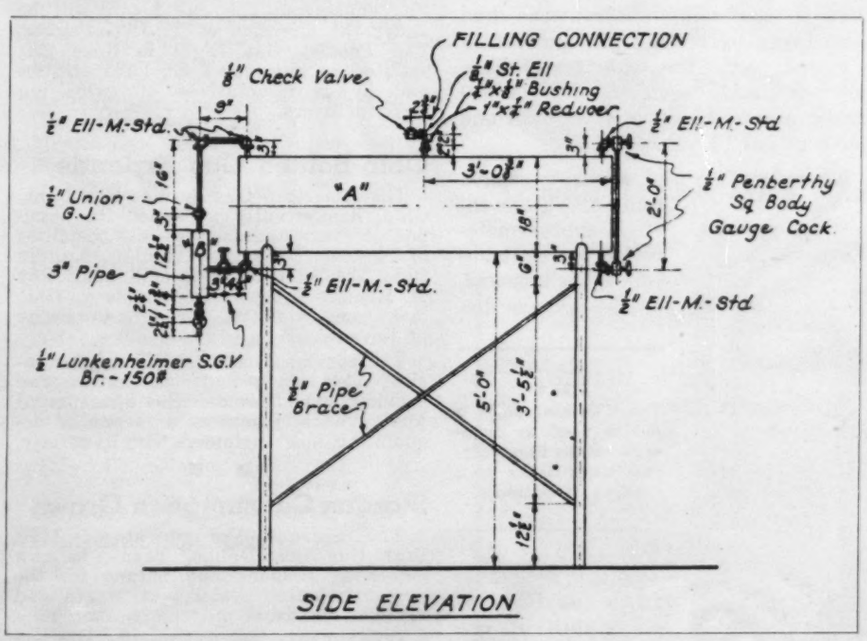


FIG. 2. Apparatus used for introducing the odorant into butane to be loaded into tank trucks.

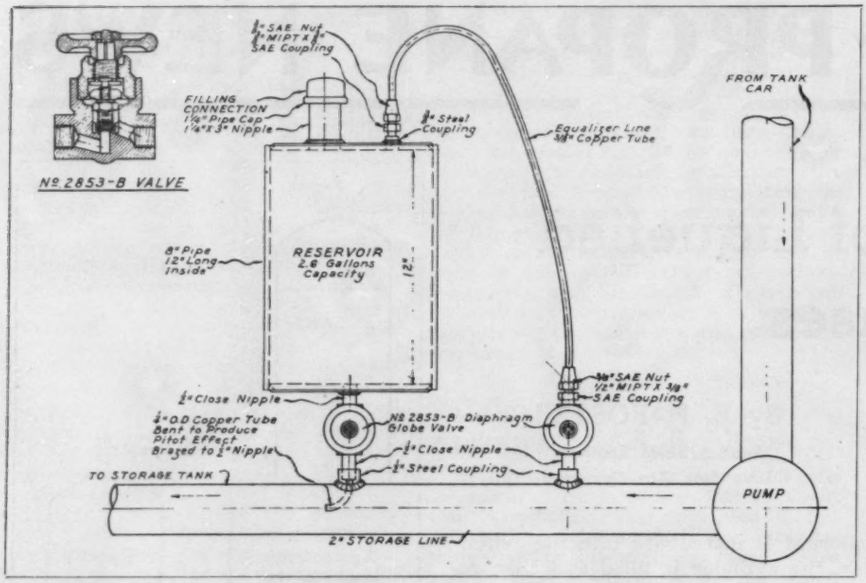


FIG. 3. A standard butane odorizer, installed at a bulk distribution station.

properly odorized, either being delivered by trucks into which the odorant was introduced or by trucks receiving their supply from the odorized bulk stations.

In order to determine quickly the results obtained from the quantities and types of odorants used, our engineers devised and constructed portable "Osmoscopes." Fig. 4 shows one of these "Osmoscopes." These instruments are calibrated so direct readings may be taken quickly enabling many homes to be accurately checked in a short time. These readings indicate the per cent of gas leaking into a room in which the observers noticed a distinct gas smell.

Numerous tests were conducted to check the accuracy of the "Osmoscope" against various mixtures of gas-in-air on a volumetric room basis. The results of these tests showed that when using the "Osmoscope," about twice as much gas was required before the observers detected a distinct gas smell, as was required when the same observers ran a room test; that is, a room of known volume had definite and increasing amounts of the raw gas liberated in it until detection was noted as would occur when a leak occurred in a room.

Of the numerous observations taken by the "Osmoscope" method all showed that the odor was distinctly noticeable in a mixture of air and gas with less than one-fourth of one per cent gas by volume. This means that if the same observations had been taken by mixing gas and air in a closed room, the odor would have been distinctly noticeable in a mixture containing only one-eighth of one per cent gas by volume.

Therefore, as the lower explosive limit of butane-in-air is approximately 1.9 per cent butane by volume and, as the odor is distinctly noticeable in a mixture of one-eighth of one per cent butane by volume, the factor of safety in odorizing by this method in these quantities is a little over 15 (1.9 divided by one-eighth).

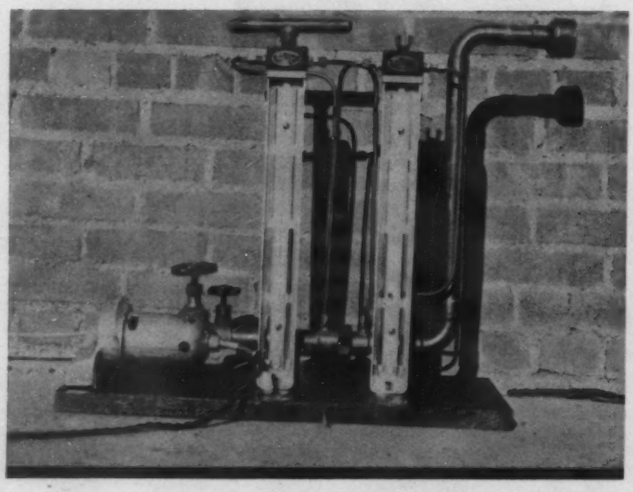


Fig. 4
The "Osmoscope," a device used to determine results from varying quantities and types of odorants.

Service men acquaint each adult member of the household of gas customers with the odor of unburned odorized gas. They turn on a burner and allow just enough gas to escape to smell, then ask each member to smell the gas at the burner so they will be familiar with the smell of unburned gas. They, also, instruct the members that if this odor is noticed to:

1. Check each appliance to see if a valve has been turned on and the gas not lighted (children may turn one of the valves in their play). If a valve is found open, turn it off and air out the house immediately.

2. If no valve is found open, cut the gas off at the service cock and call the gas company. A thoroughly trained service man will be sent out immediately to make a complete inspection.

■ ■

Midwest Hotel Show Will Feature Gas Exhibit

One of the features of the Midwest Hotel Show to be held at the Palmer House, Chicago, March 1-4, 1938, will be the display of modern commercial gas equipment, sponsored by the Industrial Gas Section, American Gas Association, and local gas companies.

The gas exhibit display is expected to include gas cooking ranges, gas deck bake ovens, gas-fired volume water heaters and gas refrigerators. The exhibit will be organized by the Committee on Displays at National Industrial Expositions of the Industrial Gas Section, Paul G. Ziegelbauer, Detroit City Gas Co., chairman. The gas booth will be under the direction of T. J. Gallagher, The Peoples Gas Light & Coke Co., assisted by gas men from local utilities and by representatives of exhibiting manufacturers.

■ ■

Ohio Bottled Gas Expands

The American Gas Service Co., Lima, Ohio, has recently expanded its liquefied petroleum gas service into the cities of Newton Falls and Chardon, both in Ohio, according to press clippings. Roy M. Mead is directing the company's Ohio operations, while W. A. Cole is in charge of the company's Chardon office.

The company has been making extensive sales plans and has offered two cooking schools under the direction of Mrs. Francis Hume as a means of acquainting new customers with its service.

■ ■

Stargas Consumption Grows

The Stargas Department of Lone Star Gas Co., Dallas, Texas, is now supplying propane and butane for the gas distribution systems at Marfa and Menard, Texas.

During 1937 the company's tank car shipments of butane increased to 105 cars over seven cars in 1935.

New Butane Corporation Operates in Missouri

THE National Butane Gas Corp. of Missouri, Sikeston, Mo., which has been operating less than a year, is already planning for spring expansion, according to Kenneth C. Layton, of the organization. Although an off-shoot of the Butane Corp. of Arkansas, the Missouri company is incorporated in Missouri as a separate institution, as are similar agencies in Kentucky, Tennessee, Louisiana, Texas, and Oklahoma.

The new company is at the present time engaged in the distribution of underground dry gas installations used with a mixture of butane and propane gases. Installations range in size from the small type for cooking and water heating to plants for large heating installations or commercial work. Storage facilities are maintained in Sikeston from which point gas is trucked throughout company territory. At the present time the Butane Corp. territory is confined to southeast Missouri. Main storage and warehousing facilities are located at Miner, Mo. A large distributing plant is also maintained at Blytheville, Mo.

In addition to butane installation equipment, the butane company maintains a stock of domestic and commercial ranges, space heaters, vented circulators, water heaters, gas fired furnaces and boilers, and gas lights.

■ ■

Southern Union Gas Co. Announces Name Change

The former Southern Union Gas Co., Columbus, Texas, recently announced that its change of name to Southern Union Utilities Co. became effective January 1, 1938. The result of a plan begun in 1933, the name change followed the completion of consolidation of several companies. Personnel of Southern Union will remain unchanged.

Companies affected by the consolidation are the Southern Union Gas Co., the M. and M. Pipe Line Co., the Wink Gas Co., Cities Water Co., and the Kingfisher County Gas Co.

Other Southern Union properties are the Arkansas Western Gas Co., New Mexico Gas Co., Pecos Valley Gas Co., and the Gas Co. of New Mexico.

■ ■

Community Public Service Purchases Olden System

The Community Public Service Co., Fort Worth, Texas, has purchased the Olden gas distribution system from the Magnolia Petroleum Co., Lee Dockery, company manager in Ranger, Texas, announced recently. Distribution of gas to Olden residents was to have begun before Feb. 1.

■ ■

Nelson Opens Butane Gas Distributing Agency

F. Jewel Nelson recently announced the opening of his distributing agency for butane gas appliances in McComb, Miss. The Nelson Co. will sell and install butane gas plants, retail the gas for plant operation, and sell butane gas appliances.

HACKNEY CYLINDERS DOMINATE THE FIELD

The dependability of Hackney cylinders for the transportation and storage of Butane and Propane has made them a 2 to 1 choice in the gas industry. Hackney precision manufacturing provides uniform wall thickness and uniform strength at all points. Maximum strength properly combined with minimum weight assures economy and satisfactory performance.

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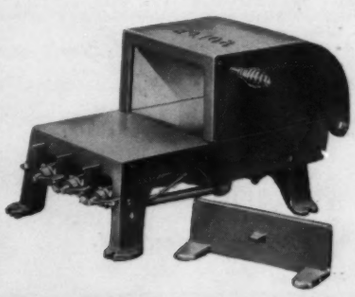

This powerful, economical Bench Furnace fills your need for a dependable unit for heating the largest soldering coppers and branding or stenciling irons. It maintains an intense, uniform heat without requiring a forced air blast or blower. Ideal for heat-treating, tempering, annealing or case-hardening work. Equipped with three of the famous Johnson Bunsen Burners, each with shut-off valve and pilot light. Has patented curved shaped hood and many other outstanding features. Write today for free catalog.

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CONNELLY CALOROPTIC
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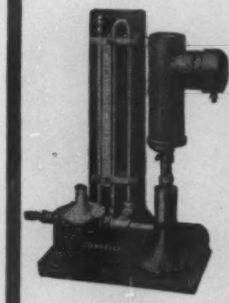

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Pacific Coast Representative:
Harry V. Payne, 3834 Third Ave., Los Angeles

Southern Gas Association

(Continued from Page 30)

fair rate and the utility be allowed a fair return," he declared. He said that there should be in the Texas state government a definite accounting of money, where it comes from, where it goes and how much can be expected to come in from various revenues.

Following Mr. Denning's address, J. V. Strange, United Gas Corp., Houston, Texas, spoke on "The National Advertising Program." The Special Southern Gas Association Committee then presented a report dealing with mobilizing member companies into a concerted sales promotion program. H. G. Bonner, Knoxville Gas Co., Knoxville, Tenn., newly elected Association president, acted as chairman of the reporting committee.

The session closed with the election of officers and directors. Those elected are: H. G. Bonner, president; W. H. McInnis, Memphis, Tenn., first vice-president; Jennings Young, Tulsa, Okla., second vice-president; members of the board of directors—W. J. Hill, Detroit, Mich.; Leonard L. Baxter, Fayetteville, Ark.; C. H. Zachry, Dallas, Texas, and F. S. Kelly, Shreveport, La. Holdover directors are: E. C. Kollock, Atlanta, Ga.; A. D. MacLean, Pittsburgh, Pa.; L. B. Denning, Jr., Dallas, Texas, and W. A. Hudson, Houston, Texas.

On Friday afternoon the last Gas Sales Conference was held with L. L. Baxter again presiding. Addresses dealt with "Appliance Financing," "Making the Unprofitable Customer Profitable," "Rural Gassification Activities," and "Showmanship in Gas Sales Promotion."

The closing Industrial Gas Forum, held Friday afternoon, was devoted to open discussion covering the industrial and commercial problems confronting attending members.

Entertainment, under the direction of F. L. Richardson, Lone Star Gas Co., for the convention was climaxed Thursday evening with a banquet and dance held at the Adolphus Hotel.

Special events of the convention included the Home Service luncheon, February 17, which featured several home service helps, and the Technical Committee Luncheon, held the same day. The latter event was followed by an open forum discussion on technical subjects.

■ ■

E. A. Munyan Transferred To United Fuel Gas Co., W. Va.

E. A. Munyan has been transferred from his former post with the Cincinnati Gas and Electric Co., Cincinnati, Ohio, to the United Fuel Gas Co., Charleston, W. Va. Since taking over his position in Charleston on Feb. 15 of this year, Mr. Munyan has been located in the field and producing end of United Fuel Gas. Both companies are subsidiaries of the Columbia Gas and Electric Corp., Wilmington, Delaware.

Since 1926 Mr. Munyan had been associated with the Cincinnati company and had held the position of manager of the gas department from 1929 until his recent transfer.

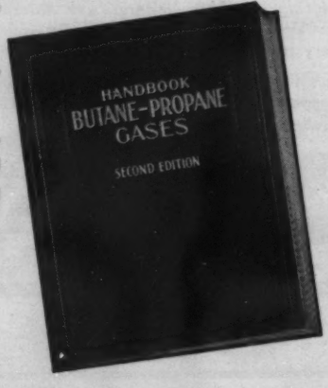
■ ■

Okla. Utilities Group Elects Officers; Convention Planned

The Oklahoma Utilities Association, at its January meeting, elected officers for the current calendar year and made preliminary plans for its 1938 annual convention, to be held March 21 and 22, at the Biltmore hotel, Oklahoma City, Okla.

Glen Kiley, convention chairman, stated that he expects a registration of about 500 at the convention. The program will include a banquet, Monday night, March 21 and a ladies' luncheon, Tuesday, March 22.

HANDBOOK
BUTANE
PROPANE
GASES



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Technical Committee of Ind. Gas Association Meets

THE Technical Committee of the Indiana Gas Association held its first meeting at Purdue University on February 7. Key men from the distribution and utilization departments of the Indiana gas utilities were present to exchange information and to lay out a program of work from the technical side of gas distribution and utilization.

The general session was followed by separate meetings of groups to discuss unaccounted for gas, use of standby plants for peak shaving, and problems in gas appliance installation and servicing. Several topics for research at the Gas Engineering Laboratories at Purdue University were suggested, and an outline of work now under way was presented by J. M. Krappe, associate in Gas Engineering, Engineering Experiment Station.

The officers of the Technical Committee are: chairman, Herman Horstman, Indianapolis; vice-chairman, D. B. Blake, Jr., Gary; and Phil Rector, Muncie, Indiana.

■ ■

Texas School Explosion Report Now Complete

The Report of Investigations (R.I. 3365, December, 1937) by the United States Department of the Interior on the school building explosion at New London, Texas, is now available. Compiled by D. J. Parker, G. W. Jones, H. B. Hill, and Gustav Wade, all of the Bureau of Mines, the report presents a detailed analysis of the disaster.

Following a consideration of the possible causes of explosion which included "dynamite or high explosives," "seepage of hydro-carbons from oil wells," "gases from the sewage system," and "natural gas," the report of investigations gives its conclusions and recommendations for avoiding similar explosions in the future.

■ ■

Indiana Gas Association To Hold May Convention

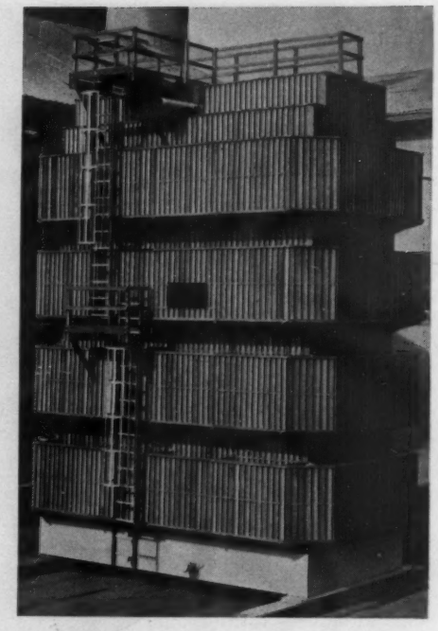
The Indiana Gas Association will hold its 1938 convention in Gary, Ind., May 16 and 17. P. A. McLeod, secretary-treasurer of the association announced recently. Convention headquarters will be at the Hotel Gary.

Ed Weston of Richmond, Ind., will act as chairman of the convention program committee.

■ ■

Bureau of Mines Releases Minerals Yearbook

The Bureau of Mines has recently published *Minerals Yearbook 1937*, a statistical and economic summary of the mineral industry during 1936. The book is divided into four parts: Survey of the mineral industries; Metals; Nonmetals; Mine safety. The third part of the minerals yearbook includes sections devoted to natural gas, and carbon black. This yearbook can be purchased only from the Superintendent of Documents, Washington, D. C. (Price—$2.25).



Miniature cooling tower constructed by Fluor Corp. for several U. S. schools in engineering.

Model Cooling Towers Presented to Schools

The Fluor Corp., Ltd. of Los Angeles, has recently built and presented to eight nationally known engineering schools one-quarter scale working models of The Fluor Standard 4A12 Aerator Type atmospheric cooling towers. The laboratory models will be used by the faculty, undergraduate and graduate students engaged in various fields of engineering research work.

Dimensions of the model are 4 ft. 6½ in. by 7 ft. 6½ in. by 10 ft., and each weighs 1200 lbs. Identical in every respect to the Fluor tower, except in size, tests proved to the satisfaction of company engineers that the model tower would perform just as standard towers in the field.

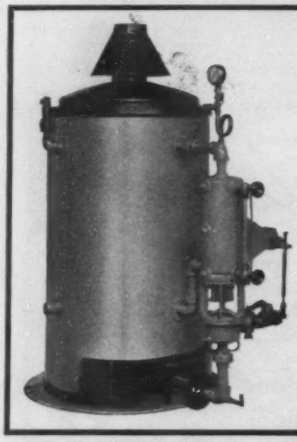
Recipients of the model towers, according to a list made available by Fluor Corporation officials are: California Institute of Technology at Pasadena, Stanford University at Palo Alto, University of California at Berkeley, all in Calif.; Colorado School of Mines at Golden, Colo.; University of Michigan at Ann Arbor, Mich.; Cornell University at Ithaca, N. Y.; Stevens Institute of Technology at Hoboken, N. J.; and Georgia School of Technology at Atlanta, Ga.

■ ■

United Natural Gas Co. Moves to New Addition

The United Natural Gas Co., Oil City, Pa., is now occupying the recently completed two and one-half story addition to the company's building.

One of the features of the addition is a modern gas-fired, conditioned-air heating plant which has been installed to heat the fourth and fifth floors of the building. Provision has been made to add dehumidification and air cooling later, if necessary.



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With the introduction of these handsome models for 1938, ROPER paves the way for new highs in Gas Range sales. Already dealers are reporting an unusual interest in the NEW ROPER features. The "Turret" Top has proven especially popular. "Sparkling with Individuality," these ranges mark a new era in gas range Styling and Performance.

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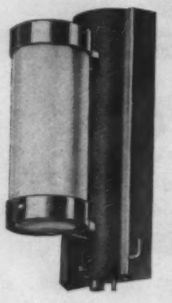
911 S. Grand Ave., Los Angeles

MODERN **GAS** LIGHTING



The HUMPHREY OPALITE

Get valuable domestic gas lighting loads with this Modern Gas Wall Lamp. Ideal for stores, offices, homes. Burns natural, manufactured, or liquified petroleum gas. Write for complete information.

General Gas Light Co.
Kalamazoo, Michigan

Battery of commercial cooking ranges installed by the American Stove Co. in the coffee shop of the Biltmore Hotel, Los Angeles, Calif.

Hotel Kitchen Equipped with Battery of Magic Chef Stainless Steel Ranges

IN arranging for the furnishing and equipping of the new coffee shop of the Biltmore Hotel, Los Angeles, Calif., Baron Long, hotel president, has given especial attention to the installation of the latest type of food preparation and service equipment.

Through the co-operation of his architect, Wayne D. McAllister; steward, Harry J. Mauler; chef, Gus Waser; and his advisory staff, Mr. Long has been able to complete his plans for rendering the maximum of service with the most modern equipment possible in the Biltmore coffee shop.

In the food service preparation and serving, the use of stainless steel has been paramount with every possible fixture made of this metal. The heavy duty equipment embraces a battery of stainless steel Magic Chef gas ranges which were built to order and fabricated to the same specifications as the United States Naval Academy's new battery of ranges, considered the finest pieces of cooking and roasting equipment available. The large Magic Chef Ceramic Broiler with the special warming compartment is also of stainless steel of the latest design. The use of Stainless Steel Savory Gas Toasters and a special built Connerton Gas Toaster have been installed to take care of the various types of toasted muffins, rolls, breads, etc.

In the setup of the food service from the cook's side, the units are all of stainless steel with the improved type of pans and insets, and on the waiter's side, the hot rolls, breads, soups, coffee, etc., and complete service of plates and dishes are available from the warmers. This insures food being served at the table at the proper temperature. All of the salads and cold dishes are available from refrigerated cases.

The finishing of this assembly has allowed the Biltmore to offer a complete service from breakfast to midnight luncheon. The entire kitchen and food service equipment was fabricated and installed by Barker Brothers' Restaurant Equipment Division under the direction of W. C. Drake and Stanley Miller. These gentlemen co-operated in every detail with the Architect and the Hotel's personnel in making this installation as near perfect as possible.

■ ■

New Field Producing Gas and Oil in Oklahoma

In Waukomis, Garfield county, Okla., a new oil and gas field is in the making at the Harry Hollenback and Nels Burton No. 1 Mattie Clark. On February 6 the well was producing at the rate of from 400 to 500 bbls. a day with gas estimated at 5,000,000 cu. ft. per day.

"Sure, I'm a TOUGH GUY . . . sometimes!"

"I saw an advertisement run by The Associated Business Papers that pictured me as typical of the prospects that advertisers' salesmen classify as 'tough guys.' The ad went on to say that while I am tough when salesmen call, I am pretty regular when I am reading an A.B.P. publication. Well, I don't resent it a bit. With so many keen salesmen calling on me every day, I have to pretend to be hard-boiled most of the time.

"But you can be sure that I put aside that 'protective mask' when I am reading GAS because that is where I go to keep in touch with trends and developments; for practical ideas suggested by an editor who is familiar with my business. I know that GAS is written for ME, not for its advertisers. Yet I read the ads, too, because I know that they are in there only because they have something to offer—not because they got editorial publicity.

"I pay cold cash for my subscription to GAS and you can bet I wouldn't do it unless I get my money's worth."

1,000,000 ft. holder (left) and 5,000,000 ft. holder (right) have been protected with NO-OX-ID for many years.

Economize—

STOP LOSS OF METAL

Steel in gas holders, pipe and service lines and other equipment is preserved at minimum cost with NO-OX-ID. Many public utility companies in all parts of the country have profited by the major maintenance economies of NO-OX-ID for years. Only NO-OX-ID combines the chemical and mechanical advantages that give this long time low cost positive protection.

Investigate NO-OX-ID Economics!

DEARBORN CHEMICAL COMPANY

Los Angeles: 807 Matee Street Phone TRinity 3385

San Francisco: 421 Bryant Street Phone SUtter 8688

In Los Angeles

it's the

HOTEL CLARK

Fifth and Hill

555 Rooms-Baths

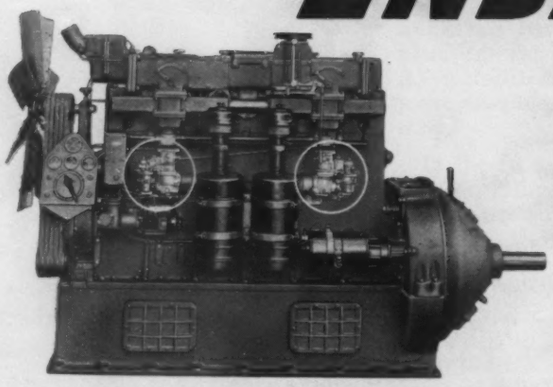
from $2.50 PER DAY

Famous for Good Food from Coast to Coast

RIGHT downtown in the center of things. Easy chairs, sleep-inspiring beds, large rooms with luxurious fittings.

P. G. B. MORRISS
Manager

LEADING ENGINE BUILDERS CHOOSE *ENSIGN*



New **BUDA** Engine, Model P-1879, equipped with two, 2" ENSIGN Combination Gas and Gasoline Carburetors.

Buda Engines are noted the world over for their *dependability!* ★ ENSIGN Gas, Combination Gas and Gasoline, and Butane Carburetors are *standard equipment* at the Buda factory and used *exclusively* by Buda's largest distributors.

★ *ENSIGN pioneered the development of carbureting equipment for dependable engine performance.*

ENSIGN CARBURETOR CO., LTD.
LOS ANGELES · DALLAS · CHICAGO

Mid-West Gas Men Hold Chicago Sales Conference

(Continued from Page 28)

versity on "The Persuasive Speech".

Over 100 delegates attended the Home Service luncheon that followed. F. X. Mettenet, The Peoples Gas Light & Coke Co., Mildred Clark, Lucile Hall, Grand Rapids Gas Light Co., Marion Schleicher, Indianapolis, and Claribel McLeod, Muncie, took part on the after-lunch program. The subjects were: "The Sales Manager and Home Service", "Announcement of 1938 Home Service Conference", "How Home Service May Aid in Creating Sales", "Individual Cookery Classes" and "Home Service Work in Muncie."

As this article is concluded it is fitting to point again to the success of the conference. In his introductory remarks, Mr. Franck expressed appreciation for the work of the Mid-west Sales Council in connection with the conference and mentioned the following especially as contributing factors to the conference: L. W. Johnson, Harry Swenson, H. D. Valentine, Charlie Luther, F. X. Mettenet, Karen Fladoes and C. G. Cassidy, all of the Peoples Gas Light & Coke Co.

Even though a $2.00 registration was charged the conference registered the largest total of any previous year. It looked for a time like the total would stand at 499, but the last minute oratory of Charlie Luther, one of the long-time pillars of the conference, produced one more registrant bringing the total to the all-time high of 500. Actual attendance was approximately 700.

■ ■

New Philadelphia Gas Agent For East Ohio Co. Retires

Anson J. Schneider, for 17 years the East Ohio Gas Co.'s agent in New Philadelphia, Ohio, resigned Jan. 15 to retire on the company's pension roll. In recognition of his 37 years with East Ohio, a group of his former associates honored Mr. Schnieder with a dinner.

Succeeding Mr. Schneider as agent is Homer A. Stiffler, former chief clerk, whose previous position will be taken by James Morgan.

■ ■

New Well May Link Fields

A new gas well, which may prove a link between the Amarillo district of Texas and the Hugoton field of Oklahoma and Kansas, has been brought in, in Sherman county, Texas, near the Oklahoma line. The well is on the No. 1 Davis ranch and at 2,822 ft. the well encountered an estimated 12,000,000 cu. ft. of dry gas per day.

Accountants' Institute Publishes New Report

THE American Institute of Accountants has recently published *A Statement of Accounting Principles.* The book has been compiled from the findings of Professors Thomas Henry Sanders of Harvard University, Henry Rand Hatfield, University of California, and Underhill Moore, Yale University. This study was sponsored more than two years ago by the Haskins and Sells Foundation, and with its permission the Institute has distributed these data in book form.

Divided into six parts, the report covers the following subjects: General Considerations in Accounting, The Income Statement, The Balance Sheet, Comments and Footnotes in Financial Reports, Summary of Accounting Principles. Copies of the book may be obtained from the American Institute of Accountants, 135 Cedar St., New York City, N. Y. (Price is 75 cents per copy with 10 per cent discount on orders of 10 or more.)

■ ■

A.G.A. Commercial Kitchen Manual Now Available

American Gas Association has recently issued a new handbook entitled *Commercial Kitchen Manual.* Dealing with the installation and servicing of commercial gas equipment, the book has been designed to include in condensed form material and instructions for the majority of situations which the service man is called upon to meet.

Divided into four major parts, the handbook covers the following subjects: (1) Types and Sizes of Appliances, (2) Installation of Gas Appliances, (3) Servicing Gas Appliances, and (4) Specific Servicing Instructions for Common Types of Commercial Kitchen Appliances and Controls. The list of 86 commercial kitchen gas appliance manufacturers included in Part IV serves as a valuable directory.

The handbook has been compiled by the Association's Committee on the Manual, including E. R. Rothert, chairman, W. J. Buckley, R. M. Conner, L. Holtz, J. M. Krappe, C. R. Miller, T. J. Perry, and C. G. Segeler. The committee endeavored to present in the new manual information which was never before available to hotels and restaurants or to service workers of the gas industry. The volume is priced at $1 per copy.

■ ■

Roper Corp. Outlines 1938 Plans at January Meeting

Sales representatives from all parts of the United States gathered at the office and factory of the Geo. D. Roper Corp., Rockford, Ill., during the first week of January to receive the sales promotional material built around the new 1938 Roper Gas Ranges. E. D. Pellegrin, well know stylist who designed the new range, discussed styling and design.

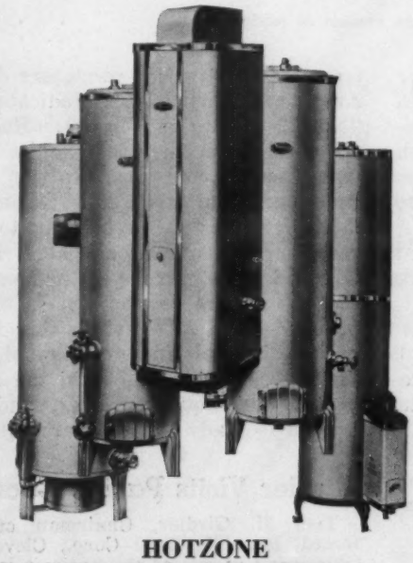
Two full days of assembly, speeches, luncheons and dinners gave the representatives an outline of a complete promotional plan, which includes use of folders, broadsides, displays, newspaper advertisements and other sales stimulating plans.

Officials of the company who took part in the meeting were Mabon P. Roper, president; Watson E. Derwent, vice president; Stanley H. Hobson, vice president; Thomas J. Reynolds, secretary and treasurer; Floyd K. Lawson, sales manager; E. R. Hollingsworth, advertising manager and Carl Sorby, sales promotion manager.

Roper Corp.'s Yorkshire Model.

Practically all the ranges in the 1938 line have giant simmer-speed burners for extra capacity operations. Low temperature super-speed ovens offer oven canning and also low temperature oven cooking. Many models are equipped with Astogril roll broilers.

INCREASE CUSTOMER ACCEPTANCE
REDUCE SERVICE COSTS



HOTZONE
GAS WATER HEATERS

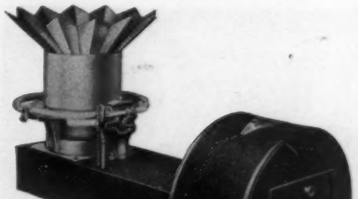
•

Install these highly efficient Welsbach Products to insure good will and eliminate excessive service costs.

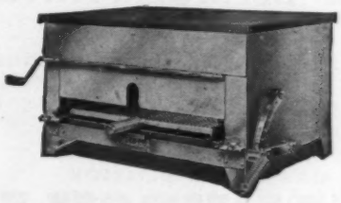
—Welsbach Products have established a reputation for reliability over a long period of years.

•

Write for information



FURNACE BURNERS



BROILER-GRIDDLES

Welsbach Company

Gloucester City, N. J.—Branches—Chicago, San Francisco

General Household Utilities Tells Plans for New Gas Refrigerator

WHAT the Thermene system of refrigeration is, and what the plans of General Household Utilities Co. of Chicago are for 1938, were outlined to a convention of enthusiastic Grunow distributors held in the Hotel Sherman January 25 and 26.

A line of three completely new models was put on display, modern in styling, and designed to be operated with natural, or manufactured, or bottled gas.

Harry Alter is president of the company; W. C. Grunow, chairman of the board, and Dr. J. D. Jordan, research engineer.

This system of refrigeration is the result of planned research into the use of "activated" carbon and the harmless, non-poisonous, non-explosive refrigerant known as Carrene. The cycle of operation is as follows:

1. *THE REFRIGERATING STAGE:* The action of the activated carbon is identical with that of a suction pump; the "refrigerant" carrene in the evaporator boils and absorbs heat from the food compartment, the carrene vapor passing down through check valve "A" to the carbon pack, where it is held in the pores of the charcoal. Its course is indicated by the "No. 1" arrow in Fig. 1. Since check valve "B" operates in the opposite direction, it is tightly closed during this activity.

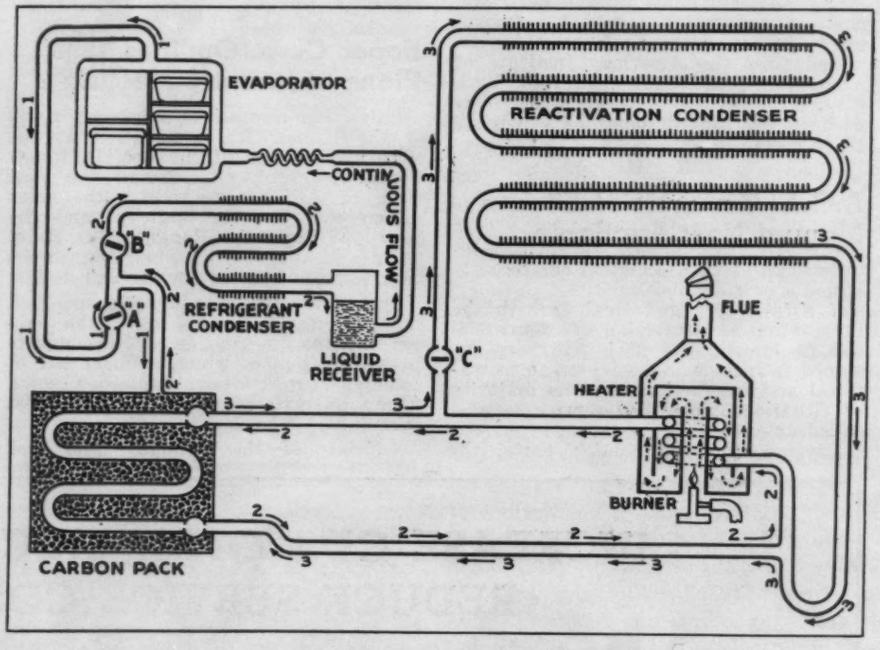


Fig. 1. The Thermene system of refrigeration.

2. *THE HEATING STAGE:* The "refrigerant" carrene is removed from the carbon by means of a miniature "steam heating" plant which consists of finned pipes embedded in the carbon and a small low-pressure carrene boiler called the "heater." A thermostat now becomes operative at a pre-determined point, and the gas burner is turned "on." This heats and vaporizes a second supply of "reactivating" carrene, located in a small coil of pipe in the heater, and the resultant "carrene steam" is carried to, and through, the finned pipes within the carbon pack, liquefies, and returns to the heater (see "No. 2" arrows in Fig. 1). During this heating stage, valve "C" is closed.

The "reactivating carrene" brings the temperature of the carbon pack up to about 225 degrees, driving the "refrigerant" carrene from the pores of the charcoal, up through check valve "B" to the refrigerant condenser, where it returns to its original liquid form (see "No. 2" arrows). Collected in the liquid receiver, this "refrigerant" carrene is continuously "metered" back into the evaporator.

An important part of Thermene operation is the fact that, valve "C" being closed, the heating of the "reactivating" carrene in the coil of the heater traps a considerable quantity of this carrene up in the "Reactivation Condenser" where it remains during heating of the Carbon pack.

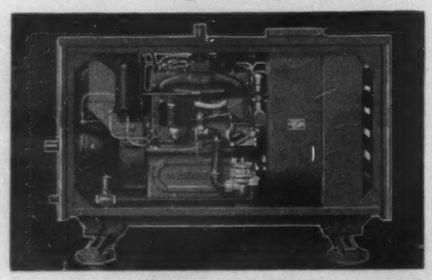
3. *THE COOLING STAGE:* Automatic controls turn off the gas flame, open the valve "C", and cool carrene from the reactivation condenser drops down to the carbon pack (indicated by "No. 3" arrows in Fig. 1). Heat is absorbed from the pack as its heat vaporizes the cool "reactivating" carrene and this vapor now passes up through valve "C," returning to the reactivation condenser where it is liquefied. The carrene of the heating-cooling system is then back to its original state, valve "C" is closed, the carbon is cool and reactivated, the "refrigerant" carrene is in the evaporator and liquid receiver, and the system is ready for another cycle.

■ ■

Girdler Visits Pacific Coast

Tom M. Girdler, Chairman of the Board, Republic Steel Corp., Cleveland, Ohio, head of one of the nation's largest steel organizations, visited California last month to address the fourteenth annual meeting of Iron and Steel executives held at Del Monte, February 10, 11, 12. His topic was "Industrial Management Problems."

Fully Automatic
Sound-Silenced
DELUXE
GAS ENGINE POWER UNITS
10 hp to 87 hp



For Residential and Commercial
AIR CONDITIONING AND REFRIGERATING
Equipment and all
GENERAL POWER applications
★
Standard Gas Engines and Power Units, 10 hp to 350 hp
★
GAS POWER DIVISION
WAUKESHA MOTOR COMPANY
WAUKESHA WISCONSIN

GET SET

for

The Gas Appliance Society's

GAS RANGE

CAMPAIGN

March 17-26

Newspaper advertising – Mat and publicity service to newspapers – Cooperative floor displays in P. G. and E. offices. – Dealer display card service

Complete details will be announced by the Society

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

Owned - Operated - Managed by Californians

G203-338

Fort Wayne Changeover

(Continued from Page 23)

The men were divided into small groups with an experienced instructor in charge of each group. They were required to attend the school nine eight-hour days. The first day was spent in explaining the company's policy, rules and regulations. The rest of the time was spent in explaining the functions of the parts of the various appliances and making each man do the mechanical part of the work under the supervision of the instructor.

Upon completion of training, the men were equipped with uniforms bearing the insignia of the company, special identification cards, and a kit of tools. They then were divided into crews of eight men each with an experienced man acting as crew foreman.

A separate department was set up, known as the conversion department, with offices and headquarters located at the gas plant. A separate storeroom was used for all conversion material. Special telephone service was installed inter-connected with the company's system. Special phone numbers were used and referred to in all advertising and mail matter sent to the customer, regarding the changeover. All domestic, commercial and industrial changeover work was referred to and handled out of this office.

The work orders were made up from the meter books in duplicate; the first copy was given to the foreman, the second copy was filed in the office. When the work was completed the order was turned in, and it was checked with the copy on file and then forwarded to the commercial department. No work order could be taken out or lost without being charged to the foreman to whom it was issued, and it had to be accounted for by him.

On the work order, the adjuster entered the meter reading, the type and kind of all appliances, both gas and electric, used in the homes, also the condition of the appliance. This information was later passed on to the sales department for future use.

The domestic adjusters did not report to the office. This was done to avoid confusion. They were given written instruction by their foreman each night as to the meeting place the following morning. Their work was issued at their meeting place and picked up each night and brought to the office by their crew foreman where he received his instructions for his crew for the following day. A supply truck was located at a given point in each section. This saved considerable time for the foreman in obtaining needed material without coming into the storeroom.

Natural gas was turned into Ft. Wayne the second time in its history on Tuesday, October 26. The last section was turned in on November 30, 1937 and by December 4 all customers' appliances had been adjusted.

Section Division

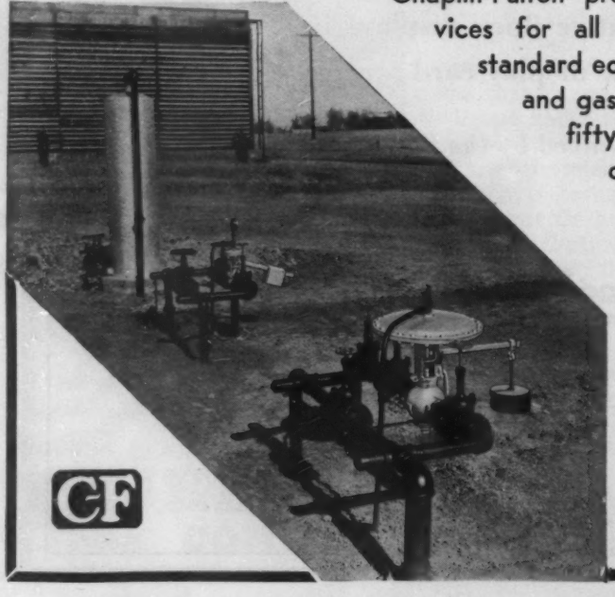
As was previously stated, Ft. Wayne was divided into seven sections, consisting of 4000 meters each. A new section was turned in on an average of every five days. This gave the customers good service as no customer had to wait more than four or five days for adjustments. The adjustments consisted of changing nearly all adjustable orifices to a fixed orifice and drilling a good many of the burners. The burners that were not drilled were broached and cleaned with a wire brush. In most cases, customers' complaints were taken care of the same day as received.

The general public was kept fully informed as to the progress of the changeover through advertisements in the daily newspapers and by direct mail. When natural gas was to be turned into a section, a map of that particular section was published in the evening paper two days previous to the turn-in and in the morning paper the day before the turn-in. There was also sent out by mail two days before the turn-in, a printed notice in a sealed envelope and also a postal card informing each customer of that section that gas would be turned into his section at a stated time (twelve midnight). It requested them to turn off all automatic appliances and to discontinue their use until an adjustment of their appliances had been made. It also asked them to consult the map published in the daily papers.

Natural gas was turned into a section at about three o'clock in the morning and the purging of manufactured gas was proceeded with immediately through purge pipes previously installed for that purpose.

WELL REGULATED

Here a Chaplin-Fulton High-Pressure Regulator and a C-F Low-Pressure Regulator with automatic cut-off are seen on the fuel line of a 400-h.p. gas engine used by a leading oil company in Kansas.



Chaplin-Fulton pressure-control devices for all uses have been standard equipment in the oil and gas industry for over fifty years. Ask for catalog.

The
CHAPLIN-FULTON MFG. CO.
28-40 Penn Ave.,
Pittsburgh, Pa.

1938 P.C.G.A. COOPERATIVE ADVERTISING CALENDAR

P. C. G. A.
Norman R. McKee, President
Clifford Johnstone, Managing Dir.

MARCH

COMMITTEE
A. C. Joy (Chairman), P. G. & E.
J. S. Spaulding, So. Calif. Gas Co.

PLUMBER ADDS NEW TOOL*
*MERCHANDISING GAS RANGES
Appliances are conveniently arranged for inspection and demonstration.
SUCCESSFUL in selling automatic gas water heaters, Adriano Ramazzotti, San Francisco plumbing contractor, added a new "tool" to his sales kit: the modern gas range. ☆ Soon he was delivering new ranges to old plumbing customers—to water heater buyers—to passersby who were attracted by his displays. ☆ Gas circulating heaters joined the Ramazzotti appliance "parade" and again volume mounted. He modernized his store, with special attention to floor display and demonstration facilities. Sales continued to expand. ☆ This, in brief, is the success story of a plumber who, by cooperating with the Gas Company, grew beyond his original business field. ☆ The same opportunity exists for you. Try it!
GAS
THE MODERN FUEL
QUICK · CLEAN · CONTROLLABLE · DEPENDABLE · ECONOMICAL

GAS APPLIANCE DEALER ADS

A great metropolitan furniture store (Barker Bros., Los Angeles) and a leading San Francisco plumber are featured in these trade journal ads—two *success stories of gas appliance merchandising*, inspiring to other dealers less active!

This time of the day was selected because few appliances would be in operation, and, if for any reason an appliance caused leakage, due to the changing of the gas, by the time natural gas reached the appliance the consumer would be rising and the leakage would be detected. The appliance also would be ready for adjustment when the adjuster arrived in the morning.

If the adjuster found no one at home when he arrived, he attached to both the front and rear door of the house, a yellow tag which requested the customer to notify the conversion department by phone just when the adjustment could be made.

Automatic gas heaters and gas refrigerators were given special attention. A list of customers having automatic water heaters and gas refrigerators, by sections, was furnished the conversion department previous to the changeover. Whenever a new section was turned in, special men were sent out to make immediate adjustment. New burners were installed in all gas refrigerators. All such type of appliances were adjusted by the second day.

House heating and unit heater installations were taken care of by the company's distribution department. Due to the time of year the changeover was made (October and November), it was necessary to see that the customers had heat at all times. This was accomplished by taking half of a burner on a gas designed unit and drilling it to the proper size for natural gas (the other half being drilled after the gas has been turned in). The burner was then adjusted to the lowest point to support combustion on manufactured gas.

Burner Adjustments

Conversion burners were adjusted in a like manner. A duplicate burner was then drilled to the proper size for natural gas and made ready for insertion. Unit heaters were adjusted in a similar manner. The morning gas was turned in, a crew started out at an early hour and made all changes and final adjustments. No trouble or difficulty was experienced on any of the heating installations by the customers. The use of this method proved very satisfactory.

The industrial changeover was taken care of by the utility company's industrial engineers, assisted by experienced men who were employed for that purpose. There are 74 industries in the Ft. Wayne division using gas as fuel for various purposes.

A total of 4,737 burners of all types were converted over to the use of natural gas. Of this total, 2,000 burners were of the premix type. Practically all burners of this type had to be designed and built on the job because of the special nature of the application and design. Considerable difficulty was experienced with various types of torches, especially those burning a mixture of oxygen and natural gas. A great deal of experimental laboratory work was necessary before a solution was found whereby combustion could be accelerated enough to give the proper temperature without blowing the flame from the tips. Another feature worthy of note was the difficulty experienced in obtaining information from the designers and manufacturers of various equipment as to what changes were necessary in order to convert them to the use of natural gas.

The introduction of natural gas to Ft. Wayne brought new problems, responsibilities and opportunities to the merchandising sales department.

When natural gas was turned in on October 26, Ft. Wayne had 90 customers using gas for house heating. Today, less than four months later, the company has more than two hundred. By the end of 1938, it anticipates having more than one thousand. A house heating department has been created; estimators and salesmen were employed. A school was set up and men carefully instructed in gas heating installation, maintenance and salesmanship.

The Ft. Wayne changeover was conceived and brought to a successful completion in seven months. This is a very short time for such an unusual job, if one considers the time involved in planning, engineering, changes to distribution system, training of men, assembling of material and other necessary details.

■ ■

Sammis Chosen to Succeed The Late T. H. Kenney

Walter H. Sammis, vice president of Consumers Power Co., Jackson, Mich., has been elected a vice president and director of the Commonwealth and Southern Corp., Wilmington, Del. Mr. Sammis succeeds the late T. A. Kenney.

In 1920 Mr. Sammis first became a member of Consumers Power Co.'s organization. He was made a vice president of the company in 1932, and in 1936 he was elected president of Pennsylvania Power Co., also an operating unit of the Commonwealth and Southern system.

HIGH CAPACITY—SMALL SIZE!
LOW PRESSURE REGULATORS

Built in THREE Sizes

½" Size	Small ¾"	Large ¾"
Capacity	Capacity	Capacity
90,000 BTU	115,000 BTU	150,000 BTU
Dimension	Dimension	Dimension
5" Overall	5" Overall	6" Overall

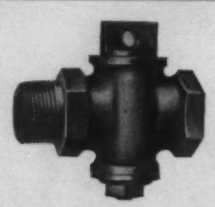
Exceptional high output—perfect regulation at all pressures—low lockup. A small size—low cost regulator with highest capacities for all types of gas appliances.

AGA—LISTED
Write for more information.

The H. M. Thermo Control Co.
814 E. 108th St. Los Angeles, Cal.

GAS STOPS

G-204B—Tee Head Standard Gas Stop Boston Key



G-311 — Flathead Extra Pattern Gas Stop, Male and Female

"by Kitson"
Surest Guarantee of Quality for Forty Years!

KITSON COMPANY
2409-15 Westmoreland St. Philadelphia, Pa.
Kitson Safety Devices (Lovekin Patents) for Domestic Water Heaters
Quality Brass Goods for Gas, Water and All Plumbing Uses
ESTABLISHED 1897

Look for the K-CO TRADE MARK

Branch Offices:
421 Dwight Building
Kansas City, Mo.
2nd Unit,
Santa Fe Building
Dallas, Texas

☆

Representatives:
Eastern Appliance Co.
Boston, Mass.
Wm. A. Ehlers
East Orange, N. J.

☆ REYNOLDS manufactures a complete line of Gas Control Regulators. Each one in its line is designed and built to meet a specific requirement of the Gas Control field.

Correct principle, sound design and dependable performance are just three of the many reasons why Reynolds Gas Control Units enjoy preference on most specification sheets. These careful buying gas executives also know that the unquestionable after-installation performance of every Reynolds Unit is backed by nearly a half century of experience.

When your next Gas Control problem arises, call REYNOLDS —their cooperation policy is one too important to overlook.

*

REYNOLDS Products for all kinds of Pressure Reductions— for either Natural or Artificial Gas.

High Pressure Service House Regulators—Straight Lever Type—Models 0-10-20 Series. Toggle Lever Type—Model 30 Series.

Low Pressure Service or Appliance Regulators.

District Station Regulators, Single or Double Valve—Auxiliary Bowl and Automatic Loading Device Optional.

High Pressure Line Regulators—Pilot Loaded—Pilot Controlled.

Toggle Type Regulators—Single Valve, Double Valve, Triple Outlet.

Seals—Dead Weight or Mercury . Back Pressure Valves . Automatic Quick Closing Anti-Vacuum Valves . Automatic Shut Off Valves . Lever Operated Valves . Louver Operated Device . Atmospheric Regulators . Vacuum Regulators.

☆

REYNOLDS GAS REGULATOR CO.
ANDERSON, INDIANA, U. S. A.

PICTURE OF CONTENTMENT IN A *Very Comfortable* BASEMENT

And why not?

This basement is 10 to 22 degrees warmer than the average. All the rooms in this house are more evenly heated at less fuel cost.

This man is pleased because his UTILITY COMPANY recommended

HOWLE HEAT EXTRACTOR

with Vitroliner, the Permanent Chimney Liner. Consequently, his home has a scientifically perfect gas heating system which has paid for itself, over and over again, in lower fuel costs, in increased basement temperatures (from 10 to 22 degrees), in more even heat in every room.

Installation is simple, cost small, and there is no operating expense, because the Howle Heat Extractor operates automatically.

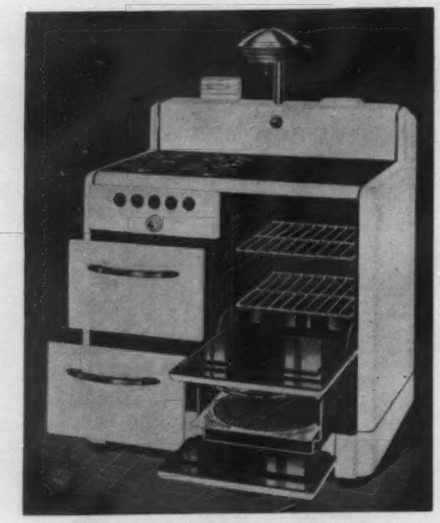
BE INFORMED—Send for free descriptive literature about the efficient Howle Heat Extractor, the industry-famous Condensation Eliminator, and Vitroliner, the Permanent Chimney Liner which keeps acid-moisture out of chimney masonry and walls, saving its cost over and over again.

This Condensation Equipment is standard, recommended by utility companies throughout the Chicago area and in almost all other centers of the United States and Canada.

Condensation Eliminator (Pat.) Trade Mark Howle Heat Extractor (Pat.)

Address all Canadian inquiries to 184 Horton Street, London, Ontario, Canada.

CONDENSATION ENGINEERING CORPORATION
TELEPHONE MONROE 1031
335 South Western Avenue, Chicago



Cribben and Sexton Marlboro Model.

Cribben and Sexton Offers The 1938 Universal Range

Cribben and Sexton Co., Chicago, Ill., has offered to the industry its completely new line of 1938 model Universal gas ranges, and with the introduction of its new models emphasises a six-point sales plan which stresses the greater cleanliness, comfort, convenience, adaptability, economy, of the new ranges, as well as the better results to be obtained through its use.

Feature of the 1938 model is its "flush to the wall construction," the side panels, base, and back shelf being so constructed that the ranges may be installed flush against the kitchen wall, concealing all connecting pipes. Also the range is constructed with the inner frame bearing all the stress, the outside porcelain serving merely as an exterior dress. Still another feature is the Universal Oven Chime, which tells the homemaker both visibly and audibly when a pre-determined oven heat is reached.

■ ■

Suburban Natural Gas Co. Sold to Charles H. Adams

The Suburban Natural Gas Service Co., Traer, Iowa, was recently sold to Charles H. Adams of Wellsburg, Iowa. Mr. Adams will personally take over the management of the Traer concern, which will continue in its corporate form. Russell Gaston, former company secretary, will continue with the organization.

C. L. Crippen, former president of the Suburban Co., will take over a district managership for the Skelgas Co. of Missouri.

■ ■

Net Income Increases 14%

The Peoples Gas, Light and Coke Co., Chicago, Ill., showed an increase in net income of 14 per cent in 1937 over 1936, according to company reports disclosed recently. For 1937 the net company income was $2,424,725, or $3.65 a share, the highest profit since 1932.

Carbon Black Plant Permit Amended in Okla. County

The Oklahoma Corporation Commission recently granted an amended permit to Ben Ashe and associates for a carbon black plant to be constructed near Guymon, Texas County, Okla. Original permit was granted about three years ago. The amended permit authorizes the processing of 60,000,000 cu. ft. of gas per day.

The Ben Ashe permit marks the third for the district. Atlas General Carbon Co. will construct a "gastex" plant, and Hagy, Harrington & Marsh, Inc., are to build a carbon plant. For many years the Corporation Commission authorized only one carbon black plant to operate in Oklahoma, but a few years ago the interpretation of the gas conservation laws was liberalized to allow the operating of more companies.

■ ■

Crenshaw and Murdock Move To Elizabeth, New Jersey

L. G. Crenshaw, sales manager of Connelly Iron Sponge & Governor Co., has transferred his headquarters from the company's Chicago plant to the Elizabeth, N. J., plant. Sales in the western division of the company will continue to be under Mr. Crenshaw's supervision.

For many years in charge of laboratory research for the Connelly company's Chicago plant, A. E. Murdock has also been transferred to Elizabeth where he will act as plant manager in charge of production.

■ ■

Chaplin-Fulton Announces Gas Regulator Catalogue

The Chaplin-Fulton Manufacturing Co., Pittsburgh, Pa., has announced that the 1938 Illustrated Catalogue of Fulton Pressure Regulators with automatic cut-off for natural and manufactured gas is now available.

The new catalogue contains descriptions and illustrations of the various types of Fulton gas pressure regulators which have been designed for the safe and economical distribution and regulation of natural and manufactured gas.

■ ■

Rheem Manufacturing Co. Transfers James to Newark

R. E. James, formerly Pacific Coast Sales Manager of the Water Heater Division of the Rheem Manufacturing Co., has been transferred to Newark, New Jersey, as general sales manager of the Gas Appliance Division of the company. G. McGaughey, formerly Northern California sales representative, will take over Mr. James' former position.

■ ■

Texas Cities Gas Co. Plans New Offices

Plans are now under way for the new Texas Cities Gas Co. office building in Galveston, Texas. The site for the new building occupies four lots at Twenty-fifth and I Streets.

The Goodman Stopper

The Reliable Shut-off for Street Mains

Equipped with Improved Patented Locking Sleeve, which locks both handles to the pipe. Stopper cannot slip. **Gas cannot pass.**

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, N. Y.

Pac. Coast Rep.: C. B. Babcock Co.
475 Eleventh Street
San Francisco, California

Electrogas
FOR EVERY HEATING NEED
FURNACES
BLOWERS
FILTERS
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Air Conditioning • Heating Equipment
WRITE FOR ATTRACTIVE DEALER PROPOSITION
ELECTROGAS FURNACE CO. 2575 BAYSHORE BLVD. SAN FRANCISCO, CALIF.

GREENLEE

Here is the Solution to Your Pipe Pushing Problems

Hydraulic PIPE PUSHER

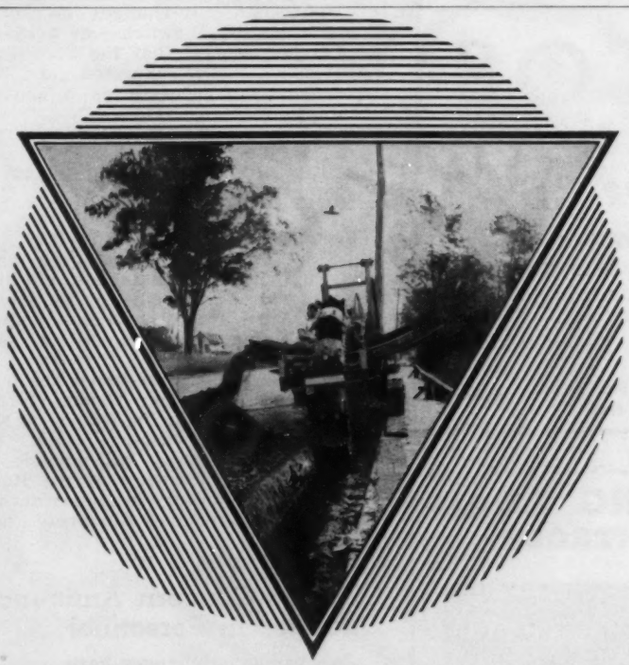
One man, standing in a comfortable position, can exert a pressure of 40,000 pounds on the pipe clamp.

Here is a real improved pipe pusher that permits one man to stand in a comfortable position and send pipe where it is wanted, simply by pumping the handles. It is compactly built, easy to handle and simple to set up and operate. Because of its time and labor-saving features, it is often able to pay for itself on the very first job.

The Greenlee Hydraulic Pipe Pusher is self-contained. It operates on a notched steel base, which permits making a push of from 4 to 7 feet, depending on the length of base used, without changing the pipe clamp. When it reaches the front end of the base, it is pushed back to the opposite end, and the quick-acting clamp is then reset. Pumping the handles sets up a pressure within two oil cylinders to push the pipe. This provides a smooth-acting, powerful mechanism that is flexible and exceptionally simple. It will push pipe up to 4-inch, has eight speeds for varying soil conditions and will exert a maximum pressure of 40,000 pounds on the pipe clamp.

WRITE TODAY for COMPLETE DETAILS

GREENLEE TOOL CO., 1700 Columbia Ave., ROCKFORD, ILLINOIS



The BABY DIGGER

Digs the Trench Where You Want to Lay the Pipe . . .

Here's equipment that fits the job; the small compact trencher that gives you dependable performance that's full sized in every respect.

Easy to move to the job; easy to move around the job. Backed by trouble-free construction of unrivaled mechanical excellence, the Baby Digger further improved, is the logical answer to Gas Company trench requirements. Available in a full range of digging widths to fit your work.

THE CLEVELAND TRENCHER COMPANY
"Pioneer of the Small Trencher"
20100 St. Clair Ave. - - - - Cleveland, Ohio

The CLEVELAND BABY DIGGER Model 95

R. L. Jones Appointed New Beeville District Manager

Richard L. Jones has been appointed manager of the Beeville district of the Texas Natural Gas Utilities, Houston, Texas. The Beeville district territory includes towns served by the utility company as far south as Kingsville as well as those in the immediate vicinity of Beeville.

■ ■

Derwent Elected to Board

W. E. Derwent, vice-president of George D. Roper Corp., Rockford, Ill., has been elected to membership on the board of directors of the Association of Gas Appliance and Equipment Manufacturers. As a member of the board, Mr. Derwent will serve as chairman of the Association's domestic gas range division. Mr. Derwent's election took place at a recent board meeting at which Merrill N. Davis, Association president and executive vice-president of S. R. Dresser Manufacturing Co., presided.

■ ■

Collins Named Ohio Fuel Gas Co. Service Manager

Wilbur T. Collins has been appointed service manager, succeeding D. R. Edwards, of the Ohio Fuel Gas Co., headquarters in Columbus, Ohio. Mr. Edwards has been promoted to general service manager for the Ohio company. Mr. Collins has announced that Eldon H. Davis of the company service department will be his assistant.

BURRELL-MASE
ENGINEERING COMPANY
Petroleum and Gas Engineers
Design—Construction—Reports—Valuations
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Suite 2900, 50 Broadway, New York City

WANTED—Two Gas Exhausters, following specifications:
One steam engine driven unit to pump 175 Mcf per hour 100°F. gas with outlet back pressure equivalent to 30 inches of water. One steam engine driven unit to pump 40 Mcf per hour 100°F. gas with outlet back pressure equivalent to 76 inches of water. Roots or equivalent preferred. State condition, price, terms and shipping date.
LOEB & EAMES, INC.
744 Broad Street, Newark, New Jersey

METALBESTOS
GAS VENT & FLUE PIPE
"The Ultimate Pipe"
Now made in both ROUND and OVAL types.
The most complete line of pipe and fittings on the market make possible the installation of METALBESTOS in every conceivable manner at lowest cost.
SOLE MANUFACTURERS
WILLIAMS-WALLACE COMPANY
160 Hooper Street, San Francisco, Calif.
Write for fully descriptive catalog and price list

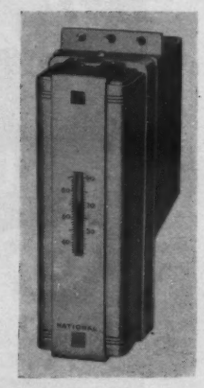
BUILD YOUR HOUSEHEATING LOAD WITH KLIXON CONTROLS

These two advanced Klixon devices give exact automatic temperature control and assure positive pilot protection for your gas-fired space heaters . . . provide sales features that make it easy to sell gas heating.
Write today for descriptive bulletins.

SPENCER THERMOSTAT COMPANY
Unit of Metals & Controls Corporation
87 FOREST STREET • ATTLEBORO, MASSACHUSETTS

New Thermostat Offered by Minneapolis-Honeywell Co.

THE National Regulator Division of the Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., recently introduced a newly designed Pneumatic Submaster room thermostat. This thermostat regulates temperatures in a room with relationship to conditions at another point.



In the summer, for example, it is advisable to raise indoor temperatures as the outside temperatures mount. By installing a Submaster thermostat under the regulation of a master controller placed at an outside location, the inside temperature will be raised, for example, from 72 to 82° F. as the outdoor temperature rises from 70 to 100° F. This instrument has been simplified in design, improved in appearance, and been reduced to half its former size.

The Submaster thermostat is designed for use with all types of heating and cooling equipment where graduated control by compressed air is desired. A pipe line leads from the master controller to a bellows arrangement on the back of the thermostat. Increasing or decreasing the air pressure in this bellows mechanically changes the setting of the indicator. A switch-over arrangement is provided so that the Submaster feature can be disconnected, and the thermostat may operate as a conventional room thermostat.

■ ■

Ozalid Plans to Open New Pacific Coast Office

The Ozalid Corp., New York, N. Y., manufacturers of dry-developing white print equipment and materials, will open a direct factory sales office on the Pacific Coast in April, according to an announcement by John R. Cassell, general sales manager.

The new office will be under the management of James F. Griffin, former Ozalid representative in Northern New York and Northeastern Ohio. Mr. Griffin's new territory will include the entire Pacific Coast west of the Rocky Mountains. Temporary headquarters will be with the McKinney Blueprint Corp., Los Angeles.

■ ■

Chicago Concern Announces Changes In Personnel

Two personnel changes have been announced by the Chicago Vitreous Enamel Product Co., Cicero, Ill. Ed F. Smith, for five years associated with Chicago Vitreous in sales and service capacity, has been promoted to District Sales Manager for Michigan, Northern Ohio and Eastern Pennsylvania. E. C. Greenstreet recently resigned from Standard Gas Equipment Co. of Baltimore, to become associated with Chicago Vitreous Enamel.

It's TAPPING TIME AGAIN

Use TIME PROVEN TAPPING MACHINES

WHEN it's time to drill or tap dry or pressure mains you can be glad that there are Mueller Tapping and Drilling Machines to do the job quickly and economically.

Mueller makes plain Drilling Machines for drilling through valves or fittings to make a branch or service connection to either low or high pressure mains. The Tapping Machines are used to drill and tap low or high pressure mains and the Drilling and Inserting Machines are used to drill through safety service tees welded to the main after which a plug is inserted in the fitting without the escape of any gas. Tapping and Inserting Machines are used to drill and tap a main and insert a plug or stop under pressure.

Drilling Machines are furnished with capacities from ¼" to 12". Tapping Machines from ⅜" to 4". Drilling and Inserting Machines from ½" to 2". Tapping and Inserting Machines from ½" to 8". Tell us your requirements so we may recommend the proper machines.

MUELLER CO., DECATUR, ILLINOIS

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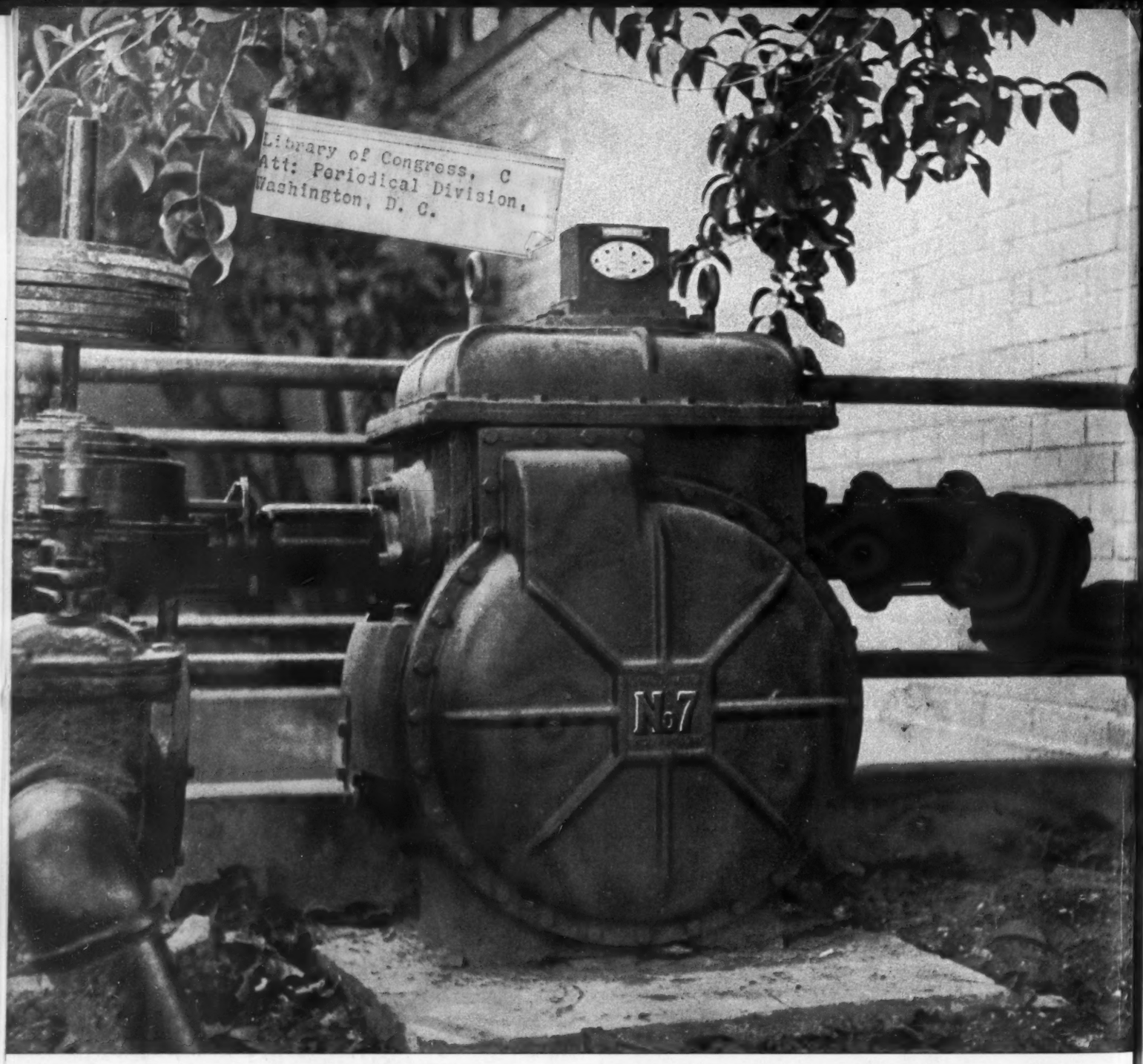

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DEPENDABILITY—ACCURACY—LONGER LIFE

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